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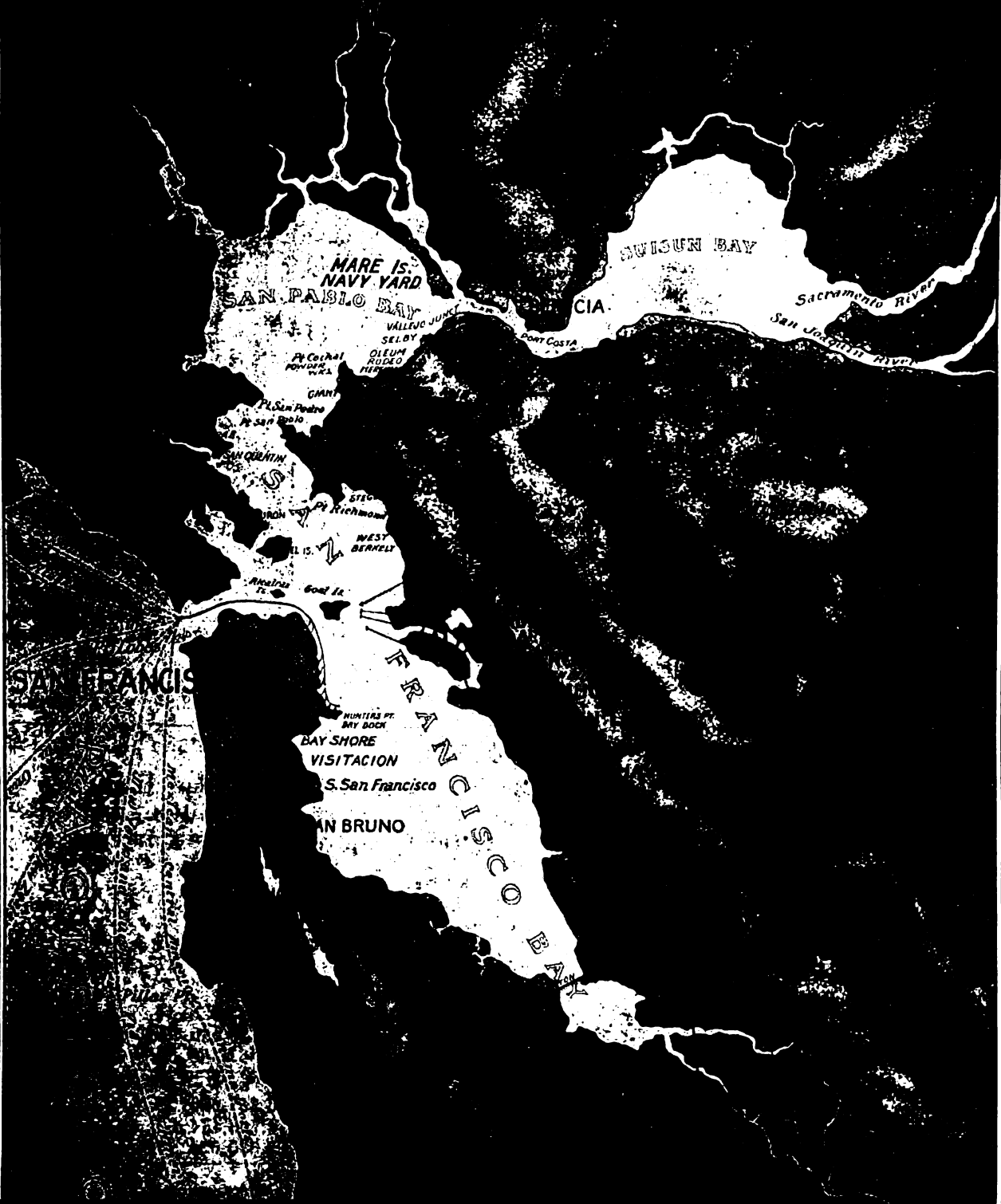
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California, resources and possibilities ...

California Development Board

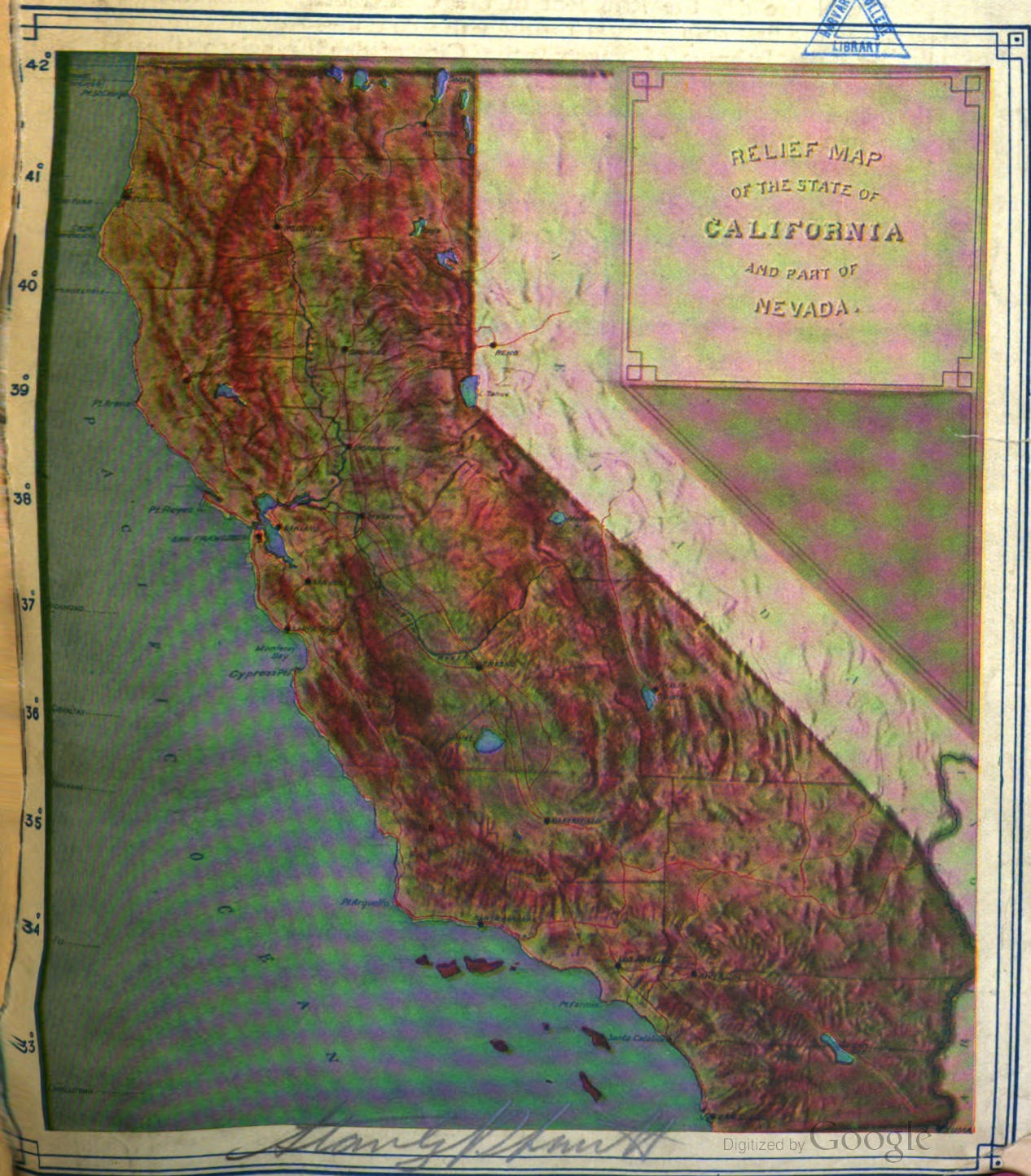
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CALIFORNIA RESOURCES AND POSSIBILITIES

PUBLISHED BY
CALIFORNIA DEVELOPMENT BOARD
SAN FRANCISCO, CAL.
1910



Panama-Pacific International Exposition, 1915

ON the day the President of the United States authorizes the first ship to pass through the completed canal across the Isthmus of Panama, the City of San Francisco, the great seaport of Pacific America, will throw wide open the gates of an International Exposition, and welcome the Nations of earth to join in the celebration in honor of the greatest triumph of modern days.

The people of San Francisco have pledged \$7,500,000 by popular subscription, and plans are under way for a \$5,000,000 Exposition Bond issue by the municipality of San Francisco, and for another \$5,000,000 in form of a State tax, making a total of \$17,500,000 as a start for a firm foundation for the World's Fair.

THE FINANCIAL QUESTION has been answered by San Francisco, and she has much to offer besides the money.

SAN FRANCISCO presents to the world the greatest evidence of human energy ever seen; she presents the epitome of American spirit; she presents the most modern city of the world, built from ashes in the short space of four years; she presents in herself an exposition that is unequalled.

SAN FRANCISCO stands at the gateway of the commerce for which the commercial world is struggling, and at this gateway she holds the finest harbor in the world, in itself a playground where all the nations may unite in a grand pageant and naval display in honor of the opening of a new world's highway.

SAN FRANCISCO presents an unrivalled climate, where stress of weather is never known, and where through the entire duration of the exposition people will enjoy comforts unknown in any other city.

In competing with her rivals for congressional recognition, San Francisco calls upon all her people and her friends to join in the effort to show the world why she should be the chosen one, and she asks only a careful and unbiased examination of her claims to precedence.

CALIFORNIA

RESOURCES AND POSSIBILITIES

TWENTIETH ANNUAL REPORT

OF THE

California State Board of Trade

FOR THE YEAR 1909

Combined With the FIRST REPORT

OF THE

California Development Board

Submitted as of March, 1910

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PUBLISHED BY THE

CALIFORNIA DEVELOPMENT BOARD

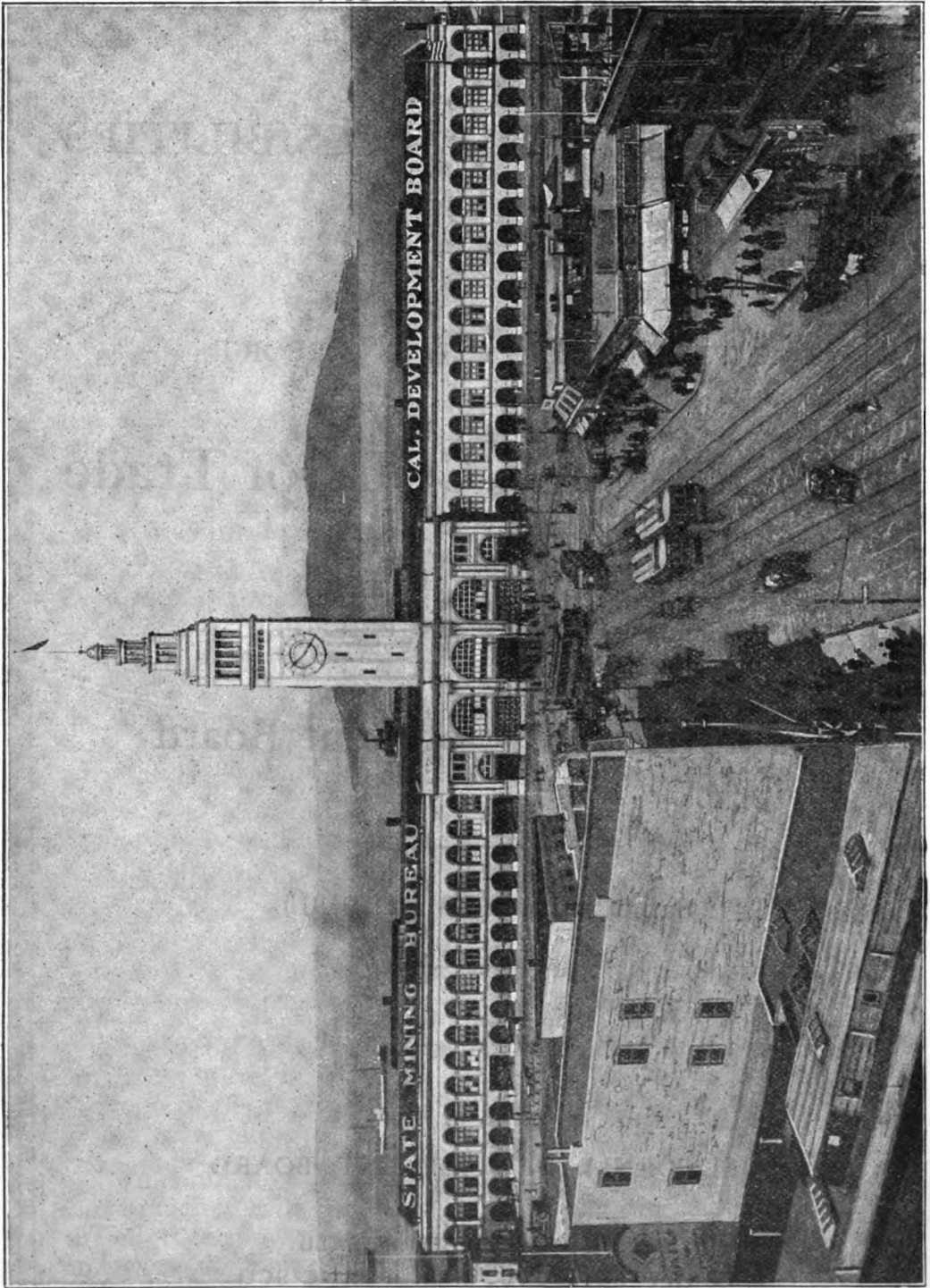
OFFICE AND EXHIBITION HALL

FERRY BUILDING, SAN FRANCISCO

UPPER FLOOR



The Board



UNION FERRY BUILDING, SAN FRANCISCO,
South half of upper floor occupied by California Development Board Offices and Exhibit.



STATE CAPITOL, SACRAMENTO

**TWENTIETH ANNUAL REPORT
OF THE
CALIFORNIA STATE BOARD OF TRADE
1909**

**Combined With the First Report
OF THE
CALIFORNIA DEVELOPMENT BOARD**

To the Members of the Board:—

This report of necessity is mainly compiled and published from the work and records of the California State Board of Trade, which on January 1, 1910, was combined with the California Promotion Committee and the Manufacturers' and Producers' Association under the name of

THE CALIFORNIA DEVELOPMENT BOARD.

It is the closing report of the California State Board of Trade as an organization and completes a series covering a period of twenty years. During this period the State Board has been a prominent and important factor in State development, and has passed through varied changes and experiences, but without change in purpose, aim, or policy. The combination with the California Promotion Committee and the Manufacturers' and Producers' Association, therefore, marks the most important change in its history, and is justified only by the hope and expectation that the combined resources and energies of the three bodies working in harmony in one organization may develop greater efficiency and influence than was possible to be attained by the separate bodies, having to a considerable extent similar purposes, working separately.

The record of the year, as in previous years, has given abundant demonstration of the benefits to the State in maintaining a central body where the varied industrial interests are attractively exhibited and made easily accessible to the home-seeker, the investor, tourist or seeker after knowledge who visits the State.

Products of the Soil. That the landless man may be brought face to face with the manless land and the prospective settler may be brought to a knowledge of the opportunities presented in the State, and the possibilities which the soil and climate of California present, the Board has endeavored to enlarge and improve the agricultural and horticultural exhibits in the Exhibit Hall each succeeding year, and to supply information through publications and by explanation calculated to benefit and assist the homeseeker.

Exhibit Hall. The exhibits in the Exhibit Hall are modern, interesting and comprehensive. This is accomplished by continued effort on the part of the Board in renewing both the stands and products, and through the co-operation of county boards of supervisors and county commercial organizations, which strive to attractively present the peculiar features of their respective districts to the great number of people who daily visit the rooms. By this combination of effort and interest, California is able to present the greatest exhibit of State products that has ever been presented by any State in the Union, a fact recognized both at home and abroad.

Number and Kind of Visitors. During the year the daily average attendance of visitors to the Exhibit Hall is estimated at upwards of five hundred.

The hall is kept open Sundays and holidays, so that it is accessible to visitors 365 days in the year. A most effective object-lesson is thus presented to some 200,000 visitors annually, the greater part of whom would otherwise have but meager opportunity to learn of the varied productions in the State. These visitors come for the most part from the States east of the Sierra Nevada Range or from foreign countries. The expression of appreciation of the products exhibited, the printed matter distributed and the oral information supplied stimulates still greater effort to enlarge this feature of advertising the State.

County and State Maps. In addition to products, the Board is supplied with large relief maps which are attractive features to those who are interested in learning of the topography of the State. These show mountain and valley regions and fix in the mind of the observer the feature of topography as it cannot be shown comprehensively in any other way. A relief map of San Francisco Bay and its environs is likewise found instructive and interesting. The magnitude of the bay and of the harbor is thus shown. Mountain ranges, rivers, and principal producing districts and location of principal towns and cities, as these maps show them, are not easily effaced from memory once they have been made known.

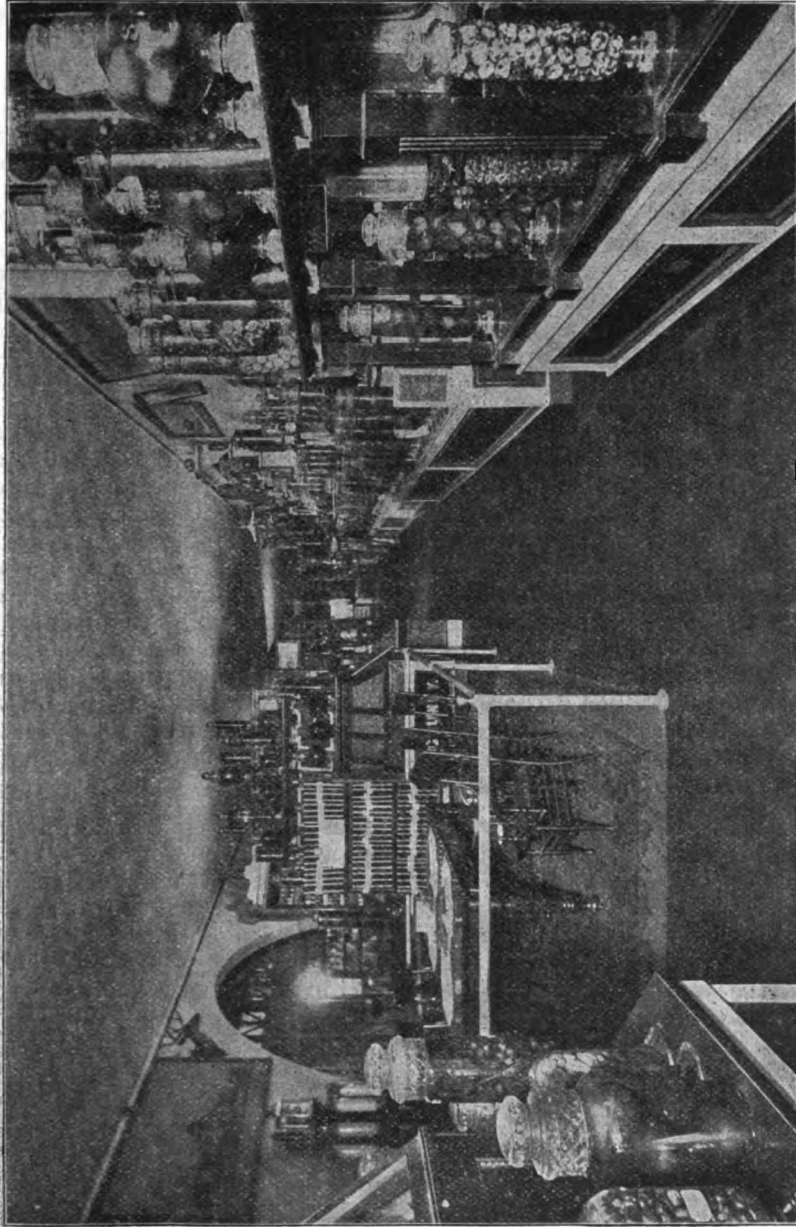
County maps in convenient racks are likewise provided, which when studied in connection with county publications, afford excellent opportunity for learning of special features that relate to agriculture, horticulture, lumbering, mining and other interests.

A State map for general distribution, and which is made a part of the annual report, is published each year. This map, which gives all railroad additions and extensions made during the year, and the changes that have been made in county boundaries, is admitted to be the most comprehensive and complete publication of its kind, and is in constant demand.

The Annual Report. Demand for copies of the Annual Report increases year by year, as the information given and its general character become better known.

While it has been the aim of the Board to add new features of interest each year, there is scope for statistical information which the resources of the Board up to now were insufficient to incorporate. It is to be hoped that the combination of the three bodies into the present organization,—viz: the California Development Board,—will permit greater scope, and that increased influence and benefit will demonstrate the wisdom of the combined effort.

The California State Board of Trade with its record of effectiveness in State Development, the Manufacturers' and Producers' Association with its experience in encouraging manufactures and the betterment of manufacturing conditions, and the Promotion Committee working along the lines of publicity and co-operation,



PERMANENT EXHIBIT OF THE CALIFORNIA DEVELOPMENT BOARD, SAN FRANCISCO.

united in well considered and systematic effort for the upbuilding of all interests in this commonwealth, seems to place the new organization on the threshold of opportunity for a greater work for the State than has yet been attempted. In this unity of endeavor the California Development Board will have the enthusiastic co-operation of active county organizations, the earnest support of manufacturing, industrial and commercial interests, and thus occupy a position of more state-wide influence than any other organization in the State.

Daily Lectures. Throughout the year daily lectures have been kept up and the lecture-room is usually well filled two or three times each day. These lectures which are of a descriptive character, are illustrated and made interesting by stereopticon views. The lecturers are specially informed about some particular part of the State so that the information gained through them is from a reliable source. As it is with the exhibits, the lectures are free, and open to all who seek to avail themselves of the opportunity to attend them.

Everything Free. No charge is made for admission to the Exhibit Hall or for publications distributed from the information bureau, and no obligation is incurred in seeking information, making use of the reading and writing tables, or for anything distributed in the way of printed publications.

Summary of Work. Bare reference only can be made to the work of the clerical force. The Executive Committee initiates and directs. The detail is attended to by experienced and trained employees, each working out some special branch of the many duties which are never at an end.

The volume of correspondence is large and the duty of answering intelligently the inquiries by mail, involves general knowledge of the State and a painstaking interest. The distribution of pamphlets, folders, etc., published by the Board, provided by the State and Federal Agricultural Departments, the University of California, and more largely than all others, by the county organizations, runs into millions each year. The demand for reliable printed information is never satisfied, nor is the supply ever filled. The influence of the constant outgoing of matter of this kind is not generally appreciated. It is only by coming in daily contact with the work that the importance of careful selection of the matter distributed and the unwisdom of extravagant statement is understood.

General Work. The Board primarily gives attention to matters pertaining to State development, but all matters having a bearing on Coast or State progress receive consideration within reasonable lines. All matters relating to the Trans-Mississippi district have a direct or remote interest on the progress of California, as do many matters of National character. These enlist the attention of the Board and are made the basis of action.

During the year, in answer to an attack in Everybody's Magazine on the Weather Bureau, after careful examination of conditions a resolution was adopted endorsing the work of the Weather Bureau, which received the thanks of the Department at Washington.

Your president was selected as chairman of the Alaska-Yukon-Pacific Exposition Committee, formed by the commercial organizations of San Francisco to represent San Francisco at the Exposition. In this capacity he supervised the preparation of an illustrated book on San Francisco, which was distributed there in connection with the illustrated lectures.

Communications were sent to various commercial organizations in the fruit centers of the State, giving them a copy of the law received from the State Inspector of the Horticultural Commission in Utah, announcing that fruit showing evidence of codling moth was to be barred from that state.

Following its work toward the eradication of thrips, when government free supply was exhausted, the Board with the approval of the Secretary of Agriculture issued a reprint of Bulletin No. 80, "The Thrips and Its Control," giving information necessary for the work of eradication. This bulletin was widely distri-

buted over the state to direct applicants, and county organizations were liberally supplied for local distribution. The importance of this matter is but little understood. The fact is that the deciduous fruit industry was threatened with destruction from the Thrips pest, and but for the attention called to it by the Board, the damage in this State would have been a very serious one. In some districts the entire crop of pears and prunes was being destroyed each year, and, until the Agricultural Department was roused to the necessity of vigorous and earnest action, no special attention was given to it except by the growers, whose efforts had proved futile up to that time. At the instance of the growers, the Board took the matter in hand and after communicating with the Chief of the Bureau of Entomology of the Agricultural Department, was able to rouse interest enough to bring about a thorough investigation of the subject by the Department at Washington, which resulted in the discovery of remedies that have, to a large extent, proven successful.

The Board issued its approval of the Centennial Exposition to be held in May, 1910, at Buenos Ayres, and also of the Industrial Exposition to be held at Turin, Italy, in 1911.

The Board being in close touch with national movements relating to agricultural and kindred industries, sent delegates to Alaska-Yukon-Pacific Exposition at Seattle, the National Irrigation Congress at Spokane, the Trans-Mississippi Commercial Congress at Denver, the Dry Farming Congress at Billings, Montana, the National Food and Dairy Congress at Denver, the National Land Congress at Chicago, the United States Land and Irrigation Exposition at Chicago, the National Mining Congress at Goldfield, and to a number of gatherings in the State.

Membership in the American National Live Stock Association, the Trans-Mississippi Commercial Congress and in the National Irrigation Congress has been continued.

The representative sent by the Promotion Committee to the National Farm Land Congress and the United States Land and Irrigation Exposition, held in Chicago, in November and December, delivered a series of illustrated lectures on California and distributed a large quantity of printed matter descriptive of the State and its industries. These created wide interest.

Among the most interesting meetings participated in by the Board were the conventions of Fruit Growers called for the purpose of improving horticultural conditions in the State, at which the use of sulphur in curing fruit and its relation to the Pure Food Law and the marketing of fruit grown in the State were questions of significant interest.

The Board is conspicuously identified with the Convention League organized for the purpose of securing conventions and congresses for California. Also in the Panama-Pacific International Exposition, which is being exploited for this city, on the completion of the Panama Canal in 1915.

Entertainment of Visitors. Attention has been paid to the entertainment of visitors during the year, not only those coming in large bodies, but individuals of more than passing note. Excursionists from adjacent states have been received and entertained at headquarters, and a large number of individuals have been given attention and shown courtesies that aid in creating a good impression of San Francisco and of the State. It also participated actively in entertaining the officers and cadets of the Japanese Fleet, and in the Portola Festival.

Publicity. Broad publicity has been given to the State during the year through articles published in papers and magazines in other states. European periodicals have also generously used articles furnished them. A vast number of readers have thus been reached.

Financial Condition and Membership. The financial condition of the Board is good and the combined resources of the three bodies open the way to enlarged fields and greater activity. The membership as now constituted is large and is being constantly increased.

Growth of the State. The growth in population, both in cities and in rural districts, for the year is not confined to any particular city or district. The thirteenth census is now being taken, but the official returns will not be available for some time. The California Development Board presents figures as nearly exact as it is possible to obtain except by census methods. These are made up from reports received from the Boards of Supervisors of the various counties and make the total population of the State 2,686,291, which is probably approximately correct.

As showing the distribution of population in the State, the following exhibit by counties is presented.

County.	Population.	Principal City.	Population.
Alameda	400,000	Oakland	235,000
Alpine	600	Markleeville	100
Amador	12,500	Jackson	3,700
Butte	31,000	Chico	12,000
Calaveras	12,500	Angels Camp	3,000
Colusa	17,000	Colusa	2,500
Contra Costa	35,000	Martinez	2,200
Del Norte	3,600	Crescent City	1,200
El Dorado	10,000	Placerville	2,500
Fresno	66,000	Fresno	33,000
Glenn	6,000	Willows	1,200
Humboldt	35,000	Eureka	12,500
Imperial	22,000	Imperial	1,800
Inyo	5,043	Independence	1,050
Kern	33,000	Bakersfield	10,000
Kings	11,500	Hanford	5,000
Lake	7,000	Lakeport	1,200
Lassen	6,000	Susanville	1,500
Los Angeles	460,000	Los Angeles	335,000
Madera	7,598	Madera	2,500
Marin	20,615	San Rafael	6,700
Mariposa	4,720	Mariposa	1,009
Mendocino	25,000	Ukiah	3,500
Merced	16,000	Merced	4,000
Modoc	5,100	Alturas	600
Mono	3,000	Bodie	800
Monterey	28,635	Salinas	5,185
Napa	18,000	Napa	6,500
Nevada	18,000	Grass Valley	5,000
Orange	35,000	Santa Ana	10,000
Placer	17,000	Auburn	2,500
Plumas	6,000	Quincy	600
Riverside	33,000	Riverside	13,000
Sacramento	72,000	Sacramento	56,000
San Benito	8,000	Hollister	3,000
San Bernardino	55,000	San Bernardino	15,000
San Diego	65,000	San Diego	40,000
San Francisco	525,000	San Francisco	525,000
San Joaquin	56,000	Stockton	25,000
San Luis Obispo	25,000	San Luis Obispo	6,000
San Mateo	27,500	Redwood City	3,500
Santa Barbara	30,140	Santa Barbara	11,370
Santa Clara	98,000	San Jose	50,000
Santa Cruz	30,000	Santa Cruz	15,000
Shasta	25,000	Redding	5,500
Sierra	4,017	Downieville	500
Siskiyou	20,000	Yreka	1,800
Solano	30,000	Vallejo	12,000
Sonoma	55,000	Santa Rosa	10,000
Stanislaus	22,000	Modesto	5,000
Sutter	9,000	Yuba City	1,200
Tehama	11,000	Red Bluff	3,500
Trinity	4,800	Weaverville	900
Tulare	35,500	Visalia	6,000
Tuolumne	15,233	Sonora	1,960
Ventura	20,190	San Buenaventura	4,316
Yolo	18,000	Woodland	3,600
Yuba	13,500	Marysville	6,500
Total	2,686,291	Total	1,558,990

Expansion of Agricultural Industries. The development of the agricultural resources of the State is exhibited in the following tables, comparing the acreage sown to certain crops in 1862 with those of 1908. The new census will show later changes.

	1862. U. S. Com. Agr. Report. Acres.	1908. State Board of Equalization Rep. Acres.
Indian Corn	17,339	40,712
Wheat	361,351	1,268,868
Rye	1,415	21,620
Oats	36,607	293,806
Barley	223,217	1,542,966
Hay	250,464	1,066,915
Potatoes	3,624	42,707
Totals	914,788	4,277,594

Add acreage of following, not mentioned in report of 1862:

Hops	9,469
Celery	4,031
Beans	126,879
Standing Alfalfa	308,519
	4,726,492

GROWTH IN ASSESSED VALUES.

	1850.	1862.	1909.
Assessed value of all property in State	\$57,670,689	\$160,369,071	\$2,438,656,544

To show the changes in farming districts in recent years, which changes are still going on, the following exhibit is submitted:

This is made up from U. S. Census Reports and shows the development in agricultural lines since California became a State.

Size.	Number of Farms.		Year.	Population of State.	No. Farms.
Under 10 acres	1890. 2,827	1900. 6,846	1850	92,597	872
10 and under 20	4,010	8,236	1860	379,994	18,716
20 and under 50	7,691	13,110	1870	560,247	23,724
50 and under 100	5,196	8,067	1880	864,694	35,934
100 and under 175	13,196		1890	1,208,130	52,814
175 and under 500	24,534	13,005	1900	1,485,053	72,542
500 and under 1000	4,367	5,329	1909 (Estimated)	2,686,289	112,000
1000 and over	3,672	4,753			
Average size	405	397.4			

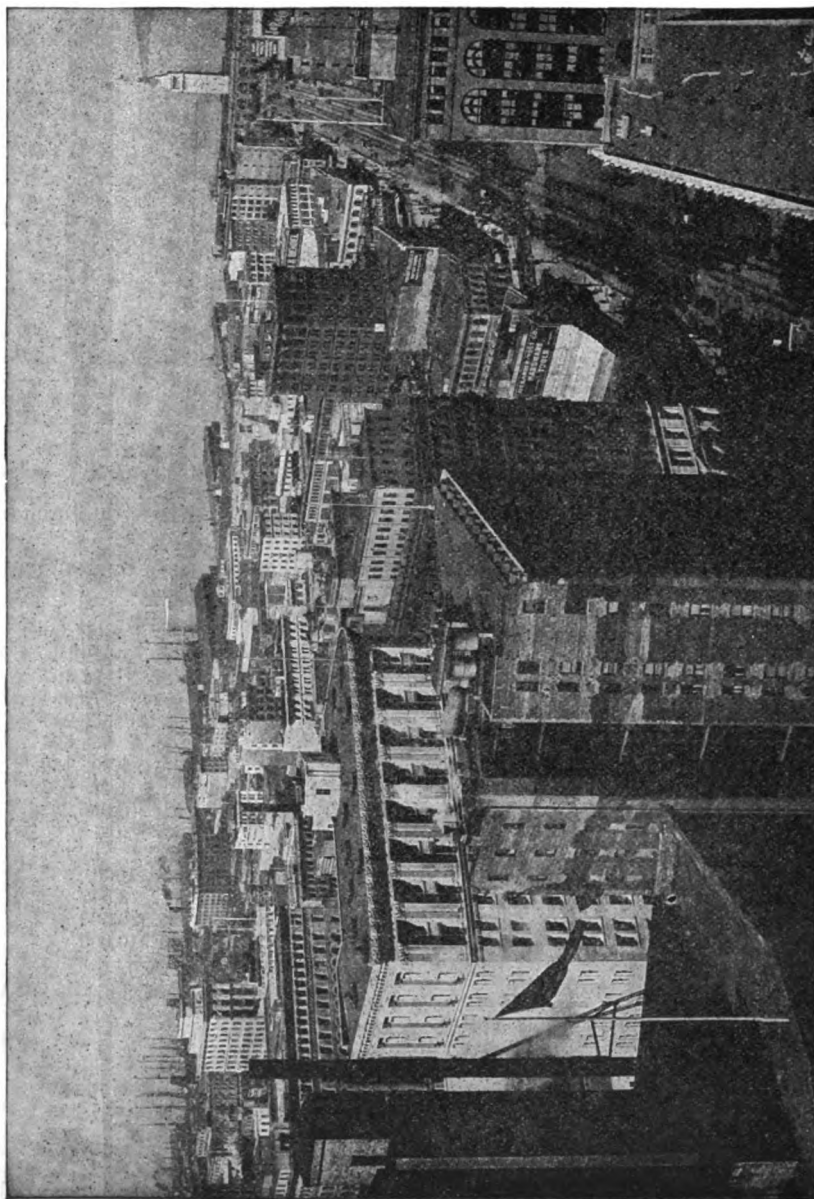
	1850.	1900.	Increased.
Number of Farms	872	72,542	83 fold
Number of Acres in Farm Lands	3,894,000	28,829,000	8 fold
Number of Acres in Farm Lands (imp.)	82,400	11,919,000	393 fold
Value of all Farm Property	1850. \$7,399,000	1900. \$1,163,000,000	

Of the 72,542 farms in 1900, there were operated by

	Per Cent of Total		Per Cent of Total
Owners	55,782 76.9	Whites	70,935 97.8
Cash Tenants	9,074 12.5	Negroes	135
Share Tenants	7,686 10.6	Indians	758 2.2
		Mongolians	814

The number and the proportion of owners operating their own holdings is much larger for 1909 than shown above for 1900, but details are not now obtainable but can be given in the next annual report.

Progress in the Metropolis. The fourth anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.



VIEW OF MARKET STREET AND DISTRICT NORTHEAST FROM THIRD STREET, SAN FRANCISCO.

San Francisco has won the admiration and wonder of the world by the courage and energy of her rebuilding, and stands to-day more fit than ever to occupy her proper place among the great cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represents sixty-one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of her people has been justified and the promise of greater prosperity for the future is hers.

To this prosperity the whole State contributes and in it shares.

San Francisco can now claim to be, in character and equipment of her new structures, the most up-to-date city in the world. The buildings erected since the fire represent a cost greater than those which were destroyed. The following is the official record:—

BUILDING CONSTRUCTION—PRIVATE CAPITAL.

Building Permits granted in San Francisco from April, 1906, to January 1, 1910:

Class A.	94	Buildings	\$21,547,260
" B.	118	"	8,470,871
" C.	1,585	"	48,775,267
Frames	14,534	"	59,958,224
Alterations	8,295	"	10,622,027
Total	24,626	"	\$149,373,649
Adding 15% for undervaluation.			22,406,047
Total			\$171,779,696

BUILDING CONSTRUCTION—MUNICIPAL.

This is inclusive of the "Bond Issue" work under way and only applies to those buildings actually in course of construction, wherein the contracts were awarded prior to January 1, 1910.

Total expended May, 1906, to January 1, 1910	\$ 6,150,371.50
Grand total in all classes.	\$177,930,067.50

The increase over the figures of December 31, 1908, viz.: \$30,454,518, indicates most strongly the continued and important building operations.

The money expended by private parties for labor on new buildings amounts to over \$60,000,000, while the municipality has made large expenditure on the same account for rehabilitation and permanent improvements.

Though San Francisco has always been famous for its hotels it added largely to the number and has now over 160 hotels with nearly 18,000 rooms and accommodations at one time for 38,000 guests. These hotels, with large boarding-houses and apartment-houses, make an aggregate of over 300 caravansaries in the city.

POPULATION OF THE METROPOLIS.

The population, according to the best methods of calculating, is estimated at 525,000.

Within a radius of twenty miles of the city hall there is a population, conservatively estimated, of 1,000,000 persons.

Predictions made at the time the annual report, March 1909, was published in reference to the future of San Francisco have been more than fulfilled. Population has increased largely and trade and commerce have kept pace with the development of the State. This is indicated by the tables showing increase in business and general industrial movement.

Real estate sales for the year amounted to	\$33,879,073.00
Postal receipts amounted to.	2,212,163.70
Imports, free	\$37,354,238.00
Imports, dutiable	14,114,785.00
Exports	55,695,436.00
Custom receipts	6,669,600.70

Important improvements have been made along the harbor front during the year and shipping facilities have been greatly increased. These improvements are but the beginning of plans projected, the carrying out of which involve large expenditures and considerable time.

San Francisco deservedly ranks as one of the Great Cities of the World. She is a Great City by reason of her position and power in the social, commercial and financial world. San Francisco is pre-eminently a commercial city. It is a foreign and domestic market without a peer on the Pacific Coast. The city has all the advantages of location possessed by any of the great commercial centers of the world. It is situated on the north end of a peninsula, six miles wide and twenty miles long, separating San Francisco Bay from the Pacific Ocean.

As a seaport it receives the commercial drainage of a region that has the greatest variety of natural resources of any part of the earth. That drainage is the great inextinguishable, economic fact that rebuilt San Francisco after the catastrophe of 1906 on greater lines than before. It was economic pressure that forced and inspired the energies which have made a new city that is the wonder of the world.

The following from the last annual report is as true now as then and is reproduced here.



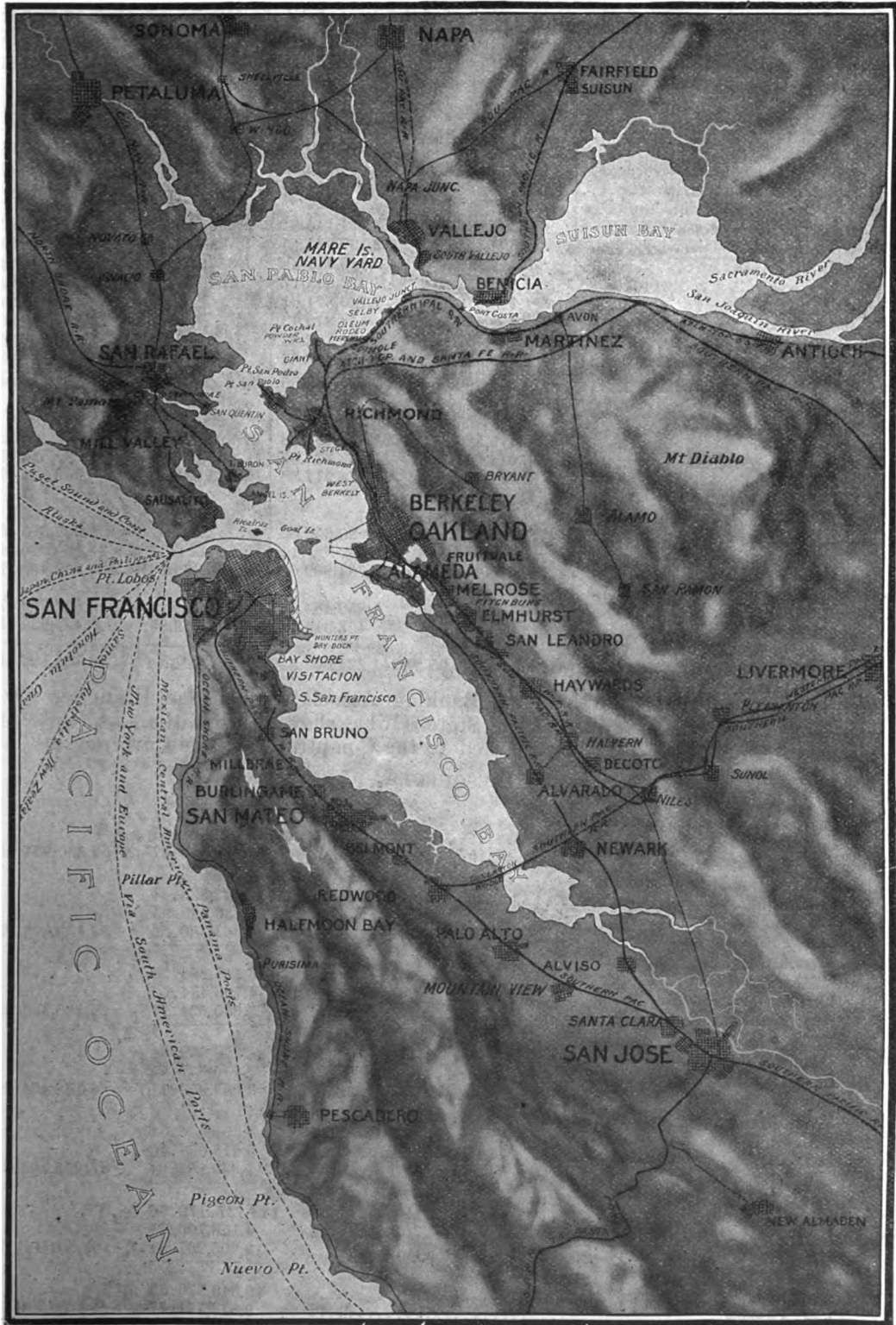
MARKET, POST AND MONTGOMERY, SAN FRANCISCO.

The Commerce of the Bay. "The great seaport of Pacific America, with constantly expanding commerce demands ever-widening facilities for handling it.

Fortunately this demand is being met by San Francisco and Oakland, the two great cities of the bay region. Formerly there was danger that much of our commerce would be alienated by the lack of adequate port and dock facilities. This risk is no longer imminent. The San Francisco Harbor Commissioners, watchful of the needs of trade, are wisely expanding its facilities on the waterfront within their jurisdiction. But when they have done all within their power, the expansion of commerce will not stop, and to meet it Oakland is wisely and watchfully moving to develop her splendid waterfront to secure deep water to accommodate the largest ships and to meet commerce by water and rail facilities that will give trade a line of least resistance.

"The Oakland waterfront is a great asset of the Pacific trade, and its improvement now planned and in progress means that the commerce of all time is to have on San Francisco Bay every advantage that natural situation justifies and that enlightened public enterprise can supply.

"Hereafter, then, there need be no fear that any ship, however great her tonnage or deep her draught, will fail of accommodation in this bay, or that any cargo, in or out, will lack the latest and most economical device for handling and transfer. The same spirit is upon both cities, not in rivalry, but with the determination that this seaport, intended by nature to be one of the world's greatest, shall by art and enterprise fulfill its destiny."



SAN FRANCISCO BAY AND VICINITY.

Financial. Abstract of the Report of Conditions of State Banks as of November 16, 1909, comprising the reports of 326 Commercial Banks and Commercial Departments, 242 Savings Banks and Savings Departments, and 14 Trust Companies.

RESOURCES.	Commercial.	Savings.	Trust.	Total, Nov. 16, 1909.
Loans on Real Estate.....	\$ 22,050,676.31	\$203,094,639.34	\$2,531,354.32	\$227,676,669.97
Other Loans, Including Overdrafts	116,823,854.76	13,576,023.26	208,890.09	130,608,768.11
Bonds and Other Securities.....	28,427,568.40	80,468,014.60	4,086,089.94	112,981,672.94
Bank Premises, Furniture and Fix- tures, and Safe Deposit Vaults..	9,238,913.86	13,471,115.81	1,046,000.00	23,756,029.67
Other Real Estate Owned.....	2,694,451.67	2,197,725.75	1,535,940.88	6,428,118.30
Due from Banks.....	50,412,113.87	19,826,711.38	1,367,791.46	71,606,616.71
Specie	16,670,032.24	6,272,863.17	24,262.58	22,967,157.99
Other Lawful Money.....	1,728,010.29	1,126,871.61	.34	2,854,882.24
Exchanges for Clearing House....	2,634,350.42	348,819.43	.....	2,893,169.85
Checks and Cash Items.....	916,447.87	82,409.83	6,509.76	1,005,367.46
Other Assets	2,359,340.36	769,468.37	455,574.07	3,584,382.80
Totals	\$253,955,760.05	\$341,234,662.55	\$11,262,413.44	\$606,452,836.04
LIABILITIES.				
Capital	\$ 40,175,829.74	\$ 21,016,297.58	\$1,825,000.00	\$ 63,017,127.32
Surplus	16,011,011.32	11,862,319.63	895,000.00	28,768,330.95
Undivided Profits	12,171,371.28	6,274,917.32	123,340.99	18,569,629.59
Bills Payable, including Certifi- cates of Deposit representing Money Borrowed	1,200,015.13	20,358.62	.....	1,220,373.75
Due to Banks	17,880,966.54	.....	.....	17,880,966.54
Individual Deposits	156,690,159.99	299,784,969.62	2,478,359.60	458,953,489.21
State, County and Municipal De- posits	6,744,805.01	1,852,484.66	.....	8,597,289.67
Other Liabilities	3,081,601.04	423,315.12	5,940,712.85	9,445,629.01
Totals	\$253,955,760.05	\$341,234,662.55	\$11,262,413.44	\$606,452,836.04

Abstract of reports of National Banking Associations of San Francisco (9), Los Angeles (9) and the rest of the State (151), showing condition at close of business, January 31, 1910, as reported to the Comptroller of the Currency.

RESOURCES.			
Loans and Discounts, Overdrafts—			
California	\$64,908,536.04		
Los Angeles	35,102,368.25		
San Francisco	69,320,049.87		\$169,330,954.16
Total U. S. Bonds and Premiums—			
California	\$12,627,528.44		
Los Angeles	5,850,989.95		
San Francisco	16,961,380.56		35,439,898.95
Other Bonds and Securities—			
California	\$13,767,280.59		
Los Angeles	4,703,434.22		
San Francisco	7,635,621.71		26,106,336.52
Bank Premises, Furniture and Fixtures—			
California	\$4,359,363.84		
Los Angeles	756,037.54		
San Francisco	3,053,053.11		8,168,454.49
Due from Banks Not Reserve Agents—			
California	\$ 4,300,956.04		
Los Angeles	5,815,058.46		
San Francisco	17,539,285.84		87,655,300.34
Due from Reserve Agents—			
California	\$14,137,172.96		
Los Angeles	4,158,706.84		
San Francisco	9,205,267.81		27,501,147.61
Cash and Cash Items—			
California	\$9,543,370.69		
Los Angeles	9,517,171.77		
San Francisco	13,460,229.09		32,520,771.55
Total resources			\$326,722,863.62

LIABILITIES.

Capital Paid Up—		
California	\$14,882,800.00	
Los Angeles	5,350,000.00	
San Francisco	17,750,000.00	\$ 37,982,800.00
Surplus and Undivided Profits—		
California	\$ 8,298,111.23	
Los Angeles	5,350,273.77	
San Francisco	11,966,430.90	25,614,815.90
Circulation—		
California	\$11,325,230.00	
Los Angeles	4,995,490.00	
San Francisco	14,820,532.50	31,141,252.50
Due to Banks—		
California	\$ 8,928,323.12	
Los Angeles	12,540,447.43	
San Francisco	42,709,536.13	64,178,306.68
United States Deposits—		
California	\$ 225,823.81	
Los Angeles	45,244.32	
San Francisco	509,090.03	780,158.16
Due Other Depositors—		
California	\$77,712,362.81	
Los Angeles	37,115,362.49	
San Francisco	49,397,866.26	164,225,591.56
Liabilities Not Otherwise Stated—		
California	\$ 2,271,557.63	
Los Angeles	506,940.02	
San Francisco	21,432.17	2,799,938.82
Total Liabilities		\$326,722,863.62

Bank Deposits. The exhibit of balances of deposits in State Banks as of November 16, 1909, as shown in the tables, was as follows:

Balance of State Bank deposits—		
326 commercial banks	\$163,434,964.00	
242 savings banks	301,737,454.28	
14 trust companies	2,478,359.60	\$467,650,777.88
Balance of 169 National Banks		164,944,787.70
Total deposits		\$632,595,565.58



UNITED STATES MINT.

Clearing House Exhibit. Clearing house statistics for the year ended December 31st are of much significance when compared with previous years and show that business has about resumed its normal volume and evidences a healthy increase over the last previous year.

SAN FRANCISCO CLEARING HOUSE EXHIBIT FOR 1906 TO 1909 COMPARED.

Month.	1906.	1907.	1908.	1909.
January	\$185,519,862.09	\$204,512,323.10	\$ 147,763,112.04	\$ 152,619,297.49
February	156,271,911.56	194,294,366.93	128,006,385.32	130,678,893.61
March	199,665,648.33	200,558,251.65	133,514,197.29	166,507,616.37
April	*107,847,591.36	198,035,735.38	140,364,763.08	159,814,592.42
May	**50,620,020.87	188,809,919.71	130,439,997.35	149,899,254.71
June	132,615,554.48	168,591,327.38	137,096,068.98	159,677,992.57
July	163,268,204.46	182,833,805.76	153,112,317.72	171,491,284.76
August	188,465,609.49	183,343,978.10	148,557,682.70	157,266,688.22
September	185,499,838.13	169,804,815.37	149,375,975.70	171,178,976.74
October	206,989,793.02	201,241,688.01	170,825,027.47	179,551,244.22
November	218,367,350.77	117,528,161.48	154,689,236.62	187,562,498.94
December	203,269,394.90	124,329,252.93	163,397,085.81	193,624,230.01
	\$1,998,400,779.46	\$2,133,883,625.80	\$1,757,141,850.08	\$1,979,872,570.06

*14 days. **21 days.



HALL OF RECORDS.

Gutted but not destroyed—First Public Building rehabilitated after the fire of April, 1906.

FINANCIAL CONDITION OF COUNTIES

17

COUNTIES	Classifica- tion	Area Square Miles	Value of Real Estate	Value of Improvements on Real Estate	Value of Personal Property Money and Solvent Credits	Value of Railroads as Assessed by State Board of Equalization	Grand Total Value of All Property	Total County Indebtedness	Total State and County Rate of Taxation Each \$100
Alameda	3d Class.	840	\$ 120,278,427	\$ 64,127,651	\$ 22,332,253	\$ 3,774,219	\$ 210,512,594	\$ 16,020.00	\$1.16 - \$1.56
Alpine	57th	575	237,355	228,509	47,560	184,472	613,444	1,52	2.05
Amador	35th	568	3,061,743	1,710,348	589,028	2,104,334	5,545,591	1.65	2.05
Butte	23d	1,765	11,446,365	4,316,010	3,825,710	340,216	21,891,419	33,000.00	1.20
Calaveras	33d	990	3,356,435	1,913,610	3,825,060	799,313	12,992,508	161,000.00	1.20
Colusa	42d	1,202	9,315,445	1,275,440	1,702,340	3,244,658	32,472,408	1.20	1.80
Contra Costa	19th	750	15,392,985	7,158,440	6,876,335	2,208,028	30,557,135	1.20	1.85
Del Norte	56th	1,546	3,425,137	235,970	298,028	727,512	5,755,616	1.20	1.85
El Dorado	40th	1,891	3,034,390	1,206,430	730,184	1,326,295	6,300,491	1.18	1.56
Fresno	7th	5,940	34,030,558	14,229,477	9,420,681	1,328,772	58,809,321	1.18	1.56
Glenn	47th	1,248	8,864,247	4,865,567	1,915,057	1,328,772	12,668,965	1.40	2.00
Humboldt	11th	3,607	21,884,106	4,022,580	3,433,610	2,353,438	29,350,186	1.40	2.00
Imperial	36 1/2 th	4,140	5,291,314	4,622,586	1,219,936	4,079,970	15,000.00	1.75	2.15
Inyo	53d	10,224	1,987,685	7,715,330	1,815,990	6,052,065	55,000.00	2.00	2.30
Kern	28th	8,159	18,773,995	7,715,330	11,842,338	2,046,784	33,074,162	1.05	1.35
Kings	37th	1,257	7,468,658	2,006,784	2,033,661	1,865,807	13,074,310	1.15	1.55
Lake	45th	1,332	2,008,498	808,135	1,620,426	515,177	3,624,390	1.20	1.80
Lassen	55th	4,750	4,002,028	308,391	1,601,128	515,177	593,879,367	1.20	1.80
Los Angeles	3d	3,958	332,002,928	149,623,151	103,845,177	8,396,473	593,879,367	1.90	1.45
Madera	4th	2,240	6,583,595	827,350	1,408,283	2,016,629	9,632,827	1.80	2.20
Marin	21st	516	10,922,515	5,360,305	1,621,837	1,478,764	19,353,481	1.16	1.55
Mariposa	29th	1,580	1,473,082	355,248	364,490	269,525	2,462,315	1,000.00	2.50
Mendocino	14th	3,480	9,571,109	2,207,158	2,358,676	1,099,214	15,636,157	1.27	1.77
Merced	39th	1,968	11,575,041	2,180,614	2,498,378	3,432,408	19,686,439	1.45	2.00
Modoc	48th	4,937	3,827,618	713,163	1,387,433	113,878	5,722,092	1.40	1.70
Monroe	58th	2,796	584,650	210,025	459,010	62,015	1,316,700	1.30	2.00
Monterey	16th	3,450	16,892,959	4,707,960	3,433,602	3,227,462	28,261,983	1.30	1.80
Napa	27th	800	6,861,635	5,368,165	2,628,735	1,429,473	16,288,008	1.38	1.74
Neveda	21st	968	2,968,180	2,876,425	1,060,425	1,202,649	8,107,679	2.00	2.50
Orange	15th	780	17,587,852	7,111,650	4,519,653	2,717,482	31,936,637	1.90	1.20
Placer	28th	1,484	5,187,475	2,661,835	974,915	3,833,167	12,757,392	24,000.00	1.475
Plumas	50th	2,361	4,166,473	621,695	698,575	209,000	5,645,747	135,000.00	2.00
Riverside	20th	7,008	13,596,377	9,708,741	2,854,976	4,509,791	30,669,885	1.15	1.75
Sacramento	5th	1,007	33,620,410	13,855,310	8,226,190	2,596,122	58,298,532	2.00	1.92
San Benito	43d	1,476	4,328,180	1,213,200	1,385,220	428,545	7,255,145	1.62	1.95
San Bernardino	10th	20,160	18,500,904	11,439,998	2,797,893	12,641,077	45,379,872	1.15	1.60
San Diego	9th	4,660	26,127,968	5,006,385	4,182,976	2,164,984	37,481,203	600,000.00	2.00
San Francisco	8th	42	311,486,116	135,273,311	92,334,598	394,282	59,487,347	12,152,300.00	1.964
San Joaquin	25th	1,370	27,454,406	11,340,452	7,164,043	4,603,249	50,592,150	290,000.00	1.20
San Luis Obispo	32d	3,500	9,229,528	2,856,976	3,172,162	1,908,799	17,167,465	102,000.00	1.15
Santa Barbara	470	17,356,495	6,851,485	6,851,485	2,149,545	817,604	32,078,529	1.15	1.65
Santa Clara	24th	2,450	16,243,490	6,775,293	6,118,660	2,970,915	32,108,358	1.40	1.75
Santa Cruz	1,355	42,385,477	20,904,373	6,118,631	2,094,139	903,975	32,002,490	300,000.00	1.20
Santa Fe	425	11,359,278	3,243,790	2,340,978	2,340,978	903,975	19,739,021	1.20	1.90
Shasta	4,050	8,076,805	3,588,600	1,465,170	2,774,787	2,774,787	15,908,362	1.50	1.90
Sierra	54th	910	1,341,800	221,485	1,521,905	2,022,262	3,357,456	1.75	2.25
Siakiyou	24th	6,078	9,464,625	3,744,494	2,391,280	2,811,973	18,412,339	1.35	1.75
Siskiyou	12th	828	12,382,544	5,333,052	2,556,385	1,760,361	22,032,342	1.60	2.00
Sonoma	6th	1,540	19,144,660	9,746,900	4,336,885	2,976,776	36,205,221	280,000.00	1.40
Stanislaus	38th	1,486	12,009,080	3,502,610	2,374,695	2,856,217	22,242,112	1,678.00	1.10
Sutter	46th	611	4,837,035	1,023,175	899,435	1,322,439	7,652,074	3,000.00	1.20
Tehama	26th	3,200	7,297,625	2,118,210	2,316,500	1,178,044	13,410,379	1.77	2.15
Trinity	52d	3,276	2,226,157	340,609	3,114,694	...	4,281,320	1.00	2.25
Tulare	18th	4,935	25,326,556	7,144,843	4,075,079	4,694,748	41,234,226	1.30	1.90
Tuolumne	2,235	1,479,080	2,748,095	2,748,095	4,888,005	2,592,522	8,694,840	1.35	1.30
Ventura	30th	1,850	15,058,098	2,842,670	4,888,005	2,592,522	24,711,242	1.05	1.40
Yolo	31st	1,017	13,757,997	2,084,345	2,782,370	2,046,286	21,022,861	.95	1.35
Yuba	41st	625	1,631,755	1,631,755	1,163,320	980,434	4,738,394	2.30	2.70
Totals		148,693	\$1,373,703,398	\$677,070,023	\$365,800,850	\$122,982,273	\$2,438,656,544	\$17,998,310.50	

Note.—Where two rates of taxation are given, the lesser rate is that levied upon property situate within the limits of incorporated cities or towns, such property being exempt from road tax, except Sacramento, where the inside is the larger.

GENERAL SUMMARY AND COMPARATIVE TABLE OF SHIPMENTS OUT OF STATE BY RAIL AND BY SEA, OF FRUITS, WINE, BRANDY AND VEGETABLES
FOR SIXTEEN CONSECUTIVE YEARS.

Tons of 2,000 Pounds.

Kinds.	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
Green Deciduous Fruits	90,892.2	66,254.8	57,838.3	72,350.2	69,732.2	98,943.6	91,176.5	93,673.7	100,390.9	101,198.7	73,983.6	115,083.6	113,679.0	106,066.0	161,224.0	203,275
Citrus Fruits	58,984.0	115,325.5	99,156.0	98,547.0	180,858.9	131,916.8	226,546.6	323,871.4	225,668.3	299,623.4	385,747.6	454,083.4	383,418.9	413,696.1	399,094.0	475,959
Dried Fruits	51,828.2	61,386.4	48,522.8	75,159.7	76,662.7	86,925.3	90,052.8	106,987.1	151,944.5	149,531.1	156,769.3	118,479.3	112,176.9	184,821.6	133,846.0	154,756
Raisins	46,954.4	46,390.1	34,434.6	39,065.8	47,796.3	38,008.7	36,047.0	43,314.0	47,575.2	39,963.4	54,134.7	32,634.7	42,457.3	*	29,601.0	61,584
Nuts	3,953.5	3,234.7	4,972.6	5,808.6	5,315.8	6,608.4	6,518.4	8,462.4	10,918.9	9,377.4	9,810.5	7,610.5	5,131.5	7,198.0	10,887.5	12,438
Canned Fruits	60,352.6	41,395.5	45,546.9	73,464.7	52,219.7	75,240.0	75,556.9	83,229.1	80,634.8	94,204.8	86,077.9	91,877.9	77,626.5	104,624.6	185,135.0	171,223
Raw Vegetables . . . . .	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93,500.8	86,014
Wine and Brandy . . . . .	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70,758.2	75,656

Carloads 10 Tons Each.

Carloads Fruit by rail and sea	31,274.4	33,547.2	29,026.7	36,439.6	43,288.6	43,364.3	52,901.5	65,953.8	61,713.3	69,689.8	76,652.4	81,376.9	73,449.0	81,640.7	82,178.0	101,206
Carloads Vegetables by rail and sea	4,276.6	3,613.6	1,130.6	4,243.8	3,045.6	2,613.6	4,367.8	8,371.7	6,130.2	7,839.2	4,428.6	5,961.0	8,982.0	4,808.2	9,350.0	8,978
Carloads Wine and Brandy, by rail and sea	7,663.5	8,056.8	7,609.0	6,897.8	9,014.0	8,713.9	9,067.3	8,605.3	8,868.2	9,733.2	10,148.8	10,641.8	8,146.9	8,850.5	7,075.8	10,506
Carloads Fruit, Vegetables, Wine and Brandy, by rail and sea	43,824.7	45,257.4	38,254.0	48,072.0	56,149.6	55,482.5	66,797.8	83,731.9	77,538.1	88,084.8	92,052.7	99,409.8	90,577.9	95,299.4	98,603.8	120,690

*All shipments of raisins by rail and by sea are included in dried fruits in 1907 and some in 1908.
†Includes shipments of canned vegetables. The pack of canned fruits and vegetables for 1909 are given on pages 19 and 21.
Not included in the above table were 35 carloads of pickled olives and 28 carloads of olive oil, which make the total of shipments 120,753 carloads of 10 tons each, which is 22,150 more carloads of 10 tons each than the highest previous year, 1908.
Dairy and poultry products, fresh and canned vegetables, shipped from this port by sea and not included above, reach a value of over \$1,500,000.

ORCHARD AND VINEYARD.

Citrus Fruits. The season closed October 31, 1909, eclipsed all previous records for citrus fruit shipments, 41,592 carloads, over 15,000,000 boxes, being sent to market outside the state, nearly 8,000 carloads more than in any previous year. The bulk of these shipments, 31,895 carloads of oranges and 6,196 carloads of lemons, went from south of Tehachapi. The balance, 2,501 carloads, were sent from the San Joaquin and Sacramento Valley sections. The Tulare district sent 1,821 carloads of oranges and 150 carloads of lemons. The northern shipments made up the rest.

Fresh Fruit. The fruit distributing associations and others furnish statistics of shipments of deciduous fruits to Eastern markets for the year 1909, as given in table herewith.

As the varieties are shown, they add to the value of the tables of shipments. The figures are for actual carloads without regard to tons in a car. The minimum fixed by the railway companies now is 15 tons, but a carload is often 30 tons. Other tables in the report retain the original 10-ton unit. As an illustration, the tables on a preceding page show 16,122 carloads of fresh fruit for 1908, while the Fruit Association's table gives the number at 12,917 cars. An apparent discrepancy occurs in using actual carloads in one instance and the 10-ton unit in the other.

SHIPMENTS FROM NORTH OF TEHACHAPI.

Varieties.	1904.	1905.	1906.	1907.	1908.	1909.
Cherries	209	79	150	98	208½	250
Apricots	97	279	16	71	231½	210
Peaches	559	1946	584	699	1980½	2599
Plums and Prunes	1053	1391	1220	1039	1763	1526
Pears	2186	1013	1513	1039	2701½	2638
Grapes	1541	1602	2052	3460	3816½	5880
Apples	71	1761	770	1085	2216	2188
*Miscellaneous						19
	5716	8071	6305	7491	12917	15280

*Includes quinces, persimmons and figs previous to 1909 not counted separately.

While the above exhibit gives but 2,188 cars as the total shipment of apples from the State for the year, the Chamber of Commerce of Watsonville reports shipment of 3,200 carloads of apples from the Pajaro Valley alone, a considerable portion of which were consumed in the State.

Dried Fruits. Nearly all kinds of deciduous fruits are dried for the market, but prunes, peaches and apricots are the most important. The dried output of all, except figs, varies largely according to the season, the demand of the Eastern market for fresh fruit, and the prices offered by the canners.

OUTPUT OF DRIED FRUITS, NOT INCLUDING PRUNES AND RAISINS, 1900-1909, IN TONS.

Year	Peaches	Apricots	Apples	Pears	Plums	Nectarines	Grapes	Figs
1900	17,170	14,000	3,150	7,275	1,950	435	240	2,000
1901	14,755	7,776	3,225	3,290	1,725	317	180	3,260
1902	25,210	18,762	4,875	2,625	1,280	455	188	3,625
1903	16,075	10,500	1,800	2,325	1,435	317	205	3,000
1904	11,500	8,500	1,500	1,750	1,150	210	170	2,850
1905	17,500	19,250	3,250	1,750	930	185	193	3,625
1906	11,250	3,250	2,750	3,500	1,100	170	200	3,375
1907	12,000	1,500	1,500	500	750	137	188	3,000
1908	22,500	19,000	3,000	1,200	1,000	350	1,500	3,000
1909	20,000	14,500	2,500	1,250	500	375	325	3,500
Average for ten years	16,796	12,000	2,755	2,547	1,257	295	339	3,126

Prunes. Of dried fruits, prunes come next in importance to raisins. Prunes are grown in many counties throughout the State; the largest center of this industry is the Santa Clara Valley. A good many prunes are grown in the San Joaquin and Sacramento Valleys and also in Contra Costa and Sonoma Counties.

The output varies largely in different years. The most reliable figures place the output for 1909 at 77,500 tons, or 36 per cent, more than the average for the six preceding years.

CALIFORNIA PRUNE OUTPUT.

Year	Tons	Year	Tons
1897	48,840	1904	67,500
1898	45,210	1905	37,500
1899	56,863	1906	90,000
1900	87,000	1907	40,000
1901	40,800	1908	25,000
1902	98,500	1909	77,500
1903	82,500		

Canned Fruit. The canning of fruit and vegetables is an important industry in California, and the yearly output of canned goods is very large.

The aggregate number of cases of all kinds of fruit and berries canned in 1909 was nearly a million and three quarter cases less than in 1908, but was larger than for any previous year. The increased demand for fresh fruit at home and for shipping can in a measure satisfactorily account for this.

The following exhibit by courtesy of the "California Fruit Grower" is made of the various kinds of fruit canned in 1908 and 1909.

Fruits—	Nos. 2½ and 3 lbs. (all grades)	1908 Cases		1909 Cases	
		No. 8 (gallons) (all grades)	Nos. 2½ and 3, etc. (all grades)	No. 8 (gallons) (all grades)	
Apples	6,100	31,600	7,375	62,600	
Apricots	1,035,600	125,650	563,660	100,450	
Blackberries	43,250	44,300	22,625	27,330	
Cherries, Royal Ann	100,700	5,000	110,250	7,450	
Cherries black	39,200	1,525	16,700	1,375	
Cherries, white	52,100	3,630	51,640	4,520	
Grapes	37,620	7,925	20,105	4,365	
Loganberries	1,029	1,371	3,204	808	
Nectarines	1,502	171	.....	14	
Pears	611,500	29,050	466,530	34,910	
Peaches, free	838,400	136,950	401,800	145,375	
Peaches, cling	1,240,350	87,260	779,725	109,260	
Plums	209,300	30,525	75,450	13,975	
Raspberries	5,365	585	3,375	215	
Strawberries	4,960	820	9,690	890	
Other fruits	272	1,053	700	635	
Total fruits (cases)	4,227,248	507,415	2,532,829	514,172	
Grand total fruits		4,734,663		3,047,001	

The following table shows the production during the last nine years:

CANNED FRUITS.

Year	Cases	Year	Cases
1901	2,677,082	1906	3,109,225
1902	2,252,790	1907	2,982,985
1903	2,783,504	1908	4,734,663
1904	2,840,614	1909	3,047,001
1905	3,283,296		

The Vineyard. California is easily the most important factor in viticulture in the United States, and grape culture is one of the most widespread industries in the State, 275,000 acres being devoted to the industry of which 150,000 acres are in wine grapes, 85,000 acres in raisin grapes and 40,000 acres in table grapes.

All varieties of European grapes are included, besides many California developments therefrom.



PICKING AND CURING RAISINS.

The annual value of the grape product, including table grapes, dried grapes and raisins, and wine and brandy, aggregates over \$25,000,000. The shipments of table grapes out of the State for 1909 amounted to 5,880 carloads.

Raisins. The center of the raisin industry is in Fresno County, although raisins are produced in other parts of the State. The crop varies from year to year, as the appended table shows; that for 1909 exceeds the average of the six preceding years by nearly 19,000 tons

CALIFORNIA RAISIN CROP.

Year	Tons	Year	Tons
1897	46,852	1904	37,500
1898	40,365	1905	43,750
1899	35,784	1906	47,500
1900	47,167	1907	60,000
1901	37,125	1908	60,000
1902	54,375	1909	70,000
1903	60,000		

Wine and Brandy. The wine and brandy product of the State for 1909 shows an aggregate increase of 8,100,000 gallons over 1908, and exceeds all previous years.

The production of sweet wine was the greatest in the history of the industry by 2,500,000 gallons, and the dry wine output was far above the average and has been exceeded only three times in previous years.

The following table shows the product of wine and brandy for the last thirteen years:

WINE AND BRANDY.

Year	Dry Wines Gals.	Sweet Wines Gals.	Brandy Gals.
1897	28,736,400	5,197,500	1,442,468
1898	10,750,000	7,779,000	1,250,000
1899	15,103,000	8,330,000	1,699,035
1900	16,737,260	6,940,300	3,256,513
1901	16,473,731	6,270,300	1,688,482
1902	28,224,146	14,835,146	4,564,173
1903	21,900,500	12,670,356	1,972,000
1904	15,589,342	13,571,856	4,420,839
1905	20,000,000	10,700,000	1,250,000
1906	26,000,000	15,000,000	1,345,000
1907	27,500,500	15,500,000	1,500,000
1908	22,500,000	14,750,000	1,750,000
1909	27,000,000	18,000,000	2,000,000

After 1904 brandy used in fortifying sweet wines was excluded.

FRESH AND CANNED VEGETABLES.

Fresh vegetables shipped out of the State by rail and sea amounted to 8,978 carloads of ten tons each, for the year, 372 carloads less than the highest year, 1908. The vegetables grown in the central and northern parts of the State, with the exception of asparagus, are mainly consumed in the home market, and shipments for 1909 were largely from the southern portion. Shipments from south of Tehachapi, which are included in the table of shipments for the State, are reported as follows by the Los Angeles Chamber of Commerce:

Kinds.	Total Value.
Celery	\$1,600,000
Cabbage	
Cauliflower	
Tomatoes	
Onions	
Potatoes	2,000,000
Cantaloupes and other melons.....	
Total	\$3,600,000

1908 was a poor year for melons and the growers had small returns from shipments. 1909 was, however, the banner year.

From the "California Fruit Grower" the following exhibit shows the kinds of vegetables canned in 1908 and 1909:

Vegetables—	1908		1909	
	Nos. 2½ and 3, etc. (all grades)	No. 8 (gallons) (all grades)	Nos. 2½ and 3, etc. (all grades)	No. 8 (gallons) (all grades)
Asparagus	238,085	335	410,335	630
Beans	38,610	1,155	10,490	1,945
Peas	81,770	6,740	88,360	15,650
Tomatoes	1,014,200	92,675	567,300	104,960
Other vegetables	21,780	6,535	38,350	4,700
Total vegetables (cases).....	1,394,445	107,440	1,114,835	127,885
Grand total vegetables.....		1,501,885		1,242,720



IRRIGATING STRAWBERRIES.

FRESH FRUITS AND VEGETABLES.

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

The following shows when the various orchard, vineyard and garden products are to be had fresh for the general market in California:

FRUITS.

Almonds	September and October.
Apples	July to November.
Apricots	June to August.
Blackberries	June to September.
Cantaloupes	May to October.
Cherries	May to July.
Currants	May and June.
Dewberries	May to July.
Figs	July to November.
Grapes	July to January.
Grape Fruit	All the year.
Guavas	All the year (two crops).
Lemons	All the year.
Limes	All the year.
Loganberries	June to September.
Loquats	May and June.
Mulberries	July to September.
Nectarines	June to August.
Olives	December and January.
Oranges	All the year.
Pears	July to November.
Peaches	July to Christmas.
Persimmons, Japanese	November and December.
Plums	June to September.
Prunes	June to September.
Pomegranates	September to December.
Quinces	October to December.
Raspberries	June to October.
Strawberries	All the year.
Watermelons	July to October.

VEGETABLES.

Asparagus	March to July.
Cabbage	All the year.
Cauliflower	October to June.
Celery	October to June.
Corn	May to October.
Cucumbers	April to November.
Lettuce	All the year.
Melons	May to October.
Onions	All the year.
Peas	All the year.
Potatoes	Two crops. Plant Aug. and Feb.
Radishes	All the year.
Spinach	October to June.
Tomatoes	April to January.

Olives, Olive Oil, etc. Olive culture is one of the oldest fruit industries in the State. The first orchard was planted in San Diego in 1769, and that county is first in production of olives and olive oil, though there are large orchards in other counties, and every year adds to the number of trees. There are thirty-eight counties reporting over 1,000 trees each, ranging from Shasta on the north to the Mexican line on the south. The number of trees, as reported by county statisticians and other authorities, is about 2,000,000.

Statistics of this industry are difficult to obtain. It has not heretofore been very attractive from a remunerative point of view, but the removal of competition with adulterated oil by the Pure Food regulations has given it quite an impetus. Estimates of the production for 1909 range from 650,000 to 900,000 gallons of olive oil, and from 250,000 to 800,000 gallons of pickled olives.

Honey. While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the San Joaquin Valley and the counties south. The crop for 1909 was the record crop and about double the average.

CALIFORNIA HONEY CROP. (Comb and Extracted.)

The estimates of the honey product for several years are:

Year.	Pounds.	Year.	Pounds.
1899.....	2,822,000	1905.....	9,500,000
1900.....	2,208,000	1906.....	5,250,000
1901.....	8,112,000	1907.....	8,700,000
1902.....	5,125,000	1908.....	5,250,000
1903.....	8,400,000	1909.....	11,532,000
1904.....	7,000,000		



THE LAND OF HONEY.

Silk. The culture of silk, which attracts little attention, is increasing slowly in California, and though not yet on a commercial basis is likely to become a good industry. The climate in California is admitted to be adapted to the raising of silk. The season for production extends over a period of six or eight months, while in Europe it lasts only as many weeks.

Nuts. The production of almonds fluctuates greatly and the crop for 1909, though much less than that of 1908, was still above the average. The production of walnuts is more regular, and the crop for the year gave good returns.

ALMONDS AND WALNUTS.

Year	Almonds	Walnuts
	Tons (2,000 lbs.)	
1895.....	825	2310
1896.....	1605	4115
1897.....	2375	3985
1898.....	450	5650
1899.....	2320	5530
1900.....	2740	5430
1901.....	1560	6910
1902.....	3270	8520
1903.....	3200	5500
1904.....	800	7590
1905.....	2125	5750
1906.....	900	6125
1907.....	750	8250
1908.....	3000	8000
1909.....	1650	7500

At an average value of \$300 per ton, the aggregate of these crops is \$2,745,000.

DAIRY INDUSTRY.

The dairy industry is year by year more extended and important. Comparative statistics of butter production of the State for a series of years beginning with 1896 show the importance of this industry, and yet the supply falls so far short of the demand as to necessitate the bringing in of large quantities of butter from other states.

The season, as covered by the report of the State Dairy Bureau, ends September 30th of each year.

Despite the persistent efforts of that bureau some creameries and large producers in a number of counties failed to make any report of their production for the year 1909.

The figures gathered by the Bureau have been supplemented by returns made to this Board from other reliable sources, but the total production given for the year probably falls short of the actual output.

Scientific Dairying. Scientific dairying has largely superseded the old methods in California, as the following table, showing the number of pounds of butter produced in the State by the creamery method and the old method for seven years ending October 1, 1902, demonstrates:

Year	Creamery Method	Old Method	Totals
1896	10,097,323	21,508,117	31,605,440
1897	10,866,646	17,811,795	28,678,439
1898	10,410,479	13,280,549	23,691,028
1899	12,725,814	12,143,270	24,869,084
1900	16,486,695	12,296,164	28,782,859
1901	19,017,512	10,713,370	29,730,882
1902	21,593,021	9,935,741	31,528,763



A DAIRY HERD FEEDING ON ALFALFA.

Since 1902 the growth is indicated in the following exhibit:

Year.	Pounds.
1903.....	34,676,311
1904.....	35,636,909
1905.....	41,961,047
1906.....	44,044,578
1907.....	44,599,211
1908.....	48,469,585
1909.....	49,595,869

California is now well to the front as a dairy State. The increase is mostly in counties where irrigation is practiced.

IRRIGATION AND DAIRYING.

As showing the effect of irrigation on the dairy interests the following exhibit from the reports of the State Dairy Bureau, giving the product of butter in pounds by principal counties, is instructive:

Counties	1905	1906	1907	1908	1909
Fresno	1,619,746	2,644,897	2,786,817	3,315,926	3,721,262
Kern	200,988	334,070	372,569	521,495	545,900
Kings	1,099,400	1,677,272	1,960,364	2,419,651	3,432,879
Merced	1,563,771	2,361,528	2,469,726	2,831,846	1,396,865
Sacramento	1,508,293	1,617,633	1,060,098	1,277,771	1,592,138
San Joaquin	1,015,568	1,641,374	1,625,538	1,605,152	2,350,000
Stanislaus	1,564,749	2,759,582	3,615,469	4,113,866	4,155,701
Tulare	1,497,762	2,075,729	2,522,707	2,729,377	2,307,238
Yolo	831,185	1,387,210	726,532	944,268	807,787
Totals	10,901,410	16,499,295	17,139,820	19,759,352	20,309,770
Humboldt	4,289,736	4,235,927	4,390,815	4,495,041	4,715,998

While irrigation has been a most important factor in the increase of butter production as shown above, Humboldt County, with its abundant rainfall rendering irrigation unnecessary, still holds the position of the banner county of the State in butter output. We append the figures for Humboldt to the table for comparison.

Some of the large butter producing counties in the southern part of the State have fallen off in yield. This is explained by two causes: the rapid increase in population in the cities and the increased consumption of milk and cream. Land south of Tehachapi is being put to other uses and dairymen are moving into the San Joaquin Valley and other localities where opportunities are equally good and land is very much lower in price.

CHEESE PRODUCTION.

Although the State has more than doubled in butter production in ten years ending 1909, the cheese production has not kept pace therewith, though there was a substantial gain for 1909 over the average of previous years.

Out of the fifty-eight counties in the State, twenty-four produced cheese during the year, as compared with twenty-two during the previous year. Monterey, Santa Clara and Sacramento, in the order named, are the leading counties, and produce more than one-third of the total output of the State. Comparing the totals for the past twelve years we have the following showing:

Year.	Pounds.	Year.	Pounds.
1897	6,399,625	1903	7,218,639
1898	5,148,372	1904	6,133,898
1899	5,294,938	1905	6,020,672
1900	4,989,960	1906	6,418,480
1901	5,681,366	1907	5,928,942
1902	6,503,441	1908	6,162,514
		1909	5,931,194

Large quantities of butter and cheese continue to come from the East, notwithstanding the superior advantages presented in this State for enlarging this branch of farming and for creamery development.

VALUE OF DAIRY OUTPUT.

A comparative estimate of the value of the dairy products of recent years is shown in the following:

1906-1907	
Value of 44,599,211 pounds of butter.....	\$12,710,778
Value of 5,928,942 pounds of cheese.....	830,051
Value of 177,193 cases of condensed milk.....	653,615
Value of milk and cream condensed.....	7,460,000
Value of by-products	1,144,000
Value of calves from dairy cows.....	1,766,000
Total	\$24,564,441
1907-1908	
Value of 48,468,585 pounds of butter	\$13,474,366
Value of 6,162,514 pounds of cheese	801,126
Value of 100,069 cases of condensed milk.....	375,259
Value of milk and cream consumed.....	7,555,000
Value of calves produced on dairy farms.....	1,760,000
Value of skim milk from butter production.....	1,258,400
Total.....	\$25,224,151
1908-1909	
Value of 49,595,869 pounds of butter.....	\$14,989,607
Value of 5,931,194 pounds of cheese.....	652,393
Value of 87,000 cases of condensed milk.....	304,500
Value of milk and cream consumed.....	7,700,000
Value of calves produced on dairy farms.....	2,400,000
Value of skim milk from butter production.....	1,285,000
Total.....	\$27,329,400

POULTRY INDUSTRY.

Poultry raising in California is a profitable industry. In a more or less practical way it has been carried on in all parts of the State, but in Sonoma, Sacramento, Colusa, Humboldt and San Benito Counties, and to a less extent in some others, the latest scientific methods are generally practiced with gratifying results. The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally. The largest incubator factory in the world is in Petaluma, Sonoma County. That county has 2,500,000 laying hens. One hatchery alone turns out about 100,000 chicks per month, and runs to full capacity most of the year.



POULTRY FARM OF THREE THOUSAND HENS.

The average chicken ranch near Petaluma consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1.00 per year.

Notwithstanding the remarkable development of the poultry business at Petaluma, the increase is not sufficient to meet the demands of the market. The rapidly expanding population of the State requires the importation of several million dozen eggs each year from Eastern points, and there is no immediate prospect of the home supply overtaking the market. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County, and the market business done from that point, and its growth, is reflected in the following tables, which show a gain for 1909 over 1908, in egg shipments, of 1,846,677 dozen, and in poultry of 36,882 dozen.

SHIPMENTS OF EGGS AND POULTRY FROM PETALUMA.

	Eggs. Dozen.	Poultry. Dozen.
1903	3,407,333	32,535
1904	3,493,321	33,286
1905	3,837,061	39,392
1906	4,334,321	39,938
1907	4,422,968	59,198
1908	5,312,804	83,136
1909	7,159,481	120,018

The above figures represent actual shipments of eggs to market. It is but fair to say that over one and a quarter million dozen eggs are produced which are used for hatching and home consumption. These added to the above, bring the total production of the Petaluma district up to near eight and one-half million dozen, or over 100,000,000 eggs.

The daily food requirements for poultry in the Petaluma district for the year aggregated over 400 tons, or 800,000 pounds, of which wheat, corn, barley, bran and middlings form the largest part, viz.: about 340 tons.

The monthly shipments of eggs and poultry from Petaluma for 1909 (as given by the Petaluma Poultry Journal) were:

	Eggs. Dozen.	Poultry. Dozen.
January	308,504	2,376
February	607,816	2,557
March	1,066,232	4,066
April	897,796	9,333
May	769,896	10,401
June	839,252	15,866
July	665,441	16,336
August	517,788	17,756
September	397,490	14,486
October	352,468	9,361
November	407,116	10,009
December	329,682	7,201
Totals for year	7,159,481	120,018
Santa Rosa shipped.....	1,436,160	
Other points in Sonoma County.....	2,500,000	
Total for the county.....	11,095,641	
Total south of Tehachapi.....	9,000,000	
Total other counties	14,506,258	
Total for State.....	34,601,899	



WHITE LEGHORNS.

Fishing Industry. According to the statistics issued by the Bureau of Fisheries in 1905 (the latest), the number of persons engaged in the food-fishing industry in California was 5,530. Capital invested was \$3,764,056, and the aggregate catch amounted to 52,109,654 pounds, with a value to the fishermen of \$2,523,141, or about \$5,000,000 in the market.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento Basin. Through the work of the Federal and State Fish Commissioners, however, the rivers have been restocked and now there are more salmon in the Sacramento River than ever before.

The State maintains seven hatcheries, at one of which, the Sisson hatchery, more salmon fry are hatched than at any other hatchery in the world. There is also one hatchery and two egg-collecting stations under Federal supervision. Over 100,000,000 fry of various kinds of food and game fishes are deposited in the streams yearly. Over 30,000,000 pounds of the fish taken for the market are caught in the waters of the Bay Counties and the Sacramento River.

One hundred and thirty-three varieties of food fish are found in the San Francisco markets, including oysters, native and transplanted, and many other varieties of shell-fish.

Farm Animals. The following statistics, taken from the "Crop Reporter" of the Department of Agriculture, for farm animals in California, show the number, average value of the different animals, and the total value. The tables for 1909 as compared with 1908 show increase in numbers of each kind of animals except swine, and an increase in values of all, which makes a total gain of \$14,535,000.

The number of sheep is still less than the average of previous years. This is ascribed to the extension of the forest reserve and restriction of grazing areas. About 50,000 head of cattle, 150,000 sheep, and 50,000 hogs are slaughtered for market in the State each month, a part of which come from adjoining states. Enlarged outside markets and increasing home demand augur well for the future of the stock-growing industry.



ALFALFA MAKES FAT HOGS.

December 31, 1906.				December 31, 1907.		
Kinds.	Number.	Average Price.	Value.	Number.	Average Price.	Value.
Horses	391,680	\$92.00	\$36,120,721	396,000	\$ 94.00	\$37,224,000
Mules	80,750	106.00	8,599,875	82,000	113.00	9,266,000
Milch Cows	405,616	35.00	14,196,560	410,000	36.00	14,760,000
Other Cattle	1,167,107	18.00	21,474,767	1,155,000	19.00	21,945,000
Sheep	2,423,423	3.30	8,006,107	2,422,000	3.47	8,404,000
Swine	550,581	7.10	3,909,125	551,000	7.20	3,967,000
Total	5,018,157	....	\$92,307,155	5,016,000	....	\$95,566,000

December 31, 1908.				December 31, 1909.		
Kinds.	Number.	Average Price.	Value.	Number.	Average Price.	Value.
Horses	412,000	\$90.00	\$37,080,000	420,000	\$105.00	\$44,100,000
Mules	83,000	107.00	8,881,000	33,000	122.00	10,126,000
Milch Cows	430,000	36.00	15,480,000	452,000	38.40	17,357,000
Other Cattle	1,155,000	17.50	20,212,000	1,120,000	20.10	22,512,000
Sheep	2,325,000	2.80	6,510,000	2,372,000	3.30	7,828,000
Swine	562,000	6.50	3,653,000	540,000	8.20	4,428,000
Total	4,967,000	....	\$91,816,000	4,987,000	....	\$106,351,000

Wool. The wool clip for 1909, as given by Mr. E. H. Tryon, of San Francisco, and others, who are showing a substantial increase over that for 1908, is less than half of what it was for many years previous to 1895. It has gradually declined in quantity during the last ten years, and for 1907-08 is below that of any previous clips for forty years.

WOOL PRODUCTION OF CALIFORNIA, 1854-1909.

Year.	Pounds.	Year.	Pounds.	Year.	Pounds.
1854	175,000	1873	32,155,169	1892	35,802,930
1855	300,000	1874	39,356,781	1893	33,169,375
1856	600,000	1875	43,532,223	1894	36,968,400
1857	1,100,000	1876	56,550,973	1895	35,856,690
1858	1,428,000	1877	53,110,742	1896	27,195,550
1859	2,378,000	1878	40,862,091	1897	34,882,325
1860	3,055,327	1879	46,903,360	1898	28,063,240
1861	3,721,998	1880	46,074,154	1899	28,332,090
1862	5,996,300	1881	45,076,639	1900	27,750,000
1863	6,268,480	1882	40,529,119	1901	26,900,000
1864	7,923,670	1883	40,848,690	1902	21,000,000
1865	8,949,931	1884	37,415,330	1903	22,000,000
1866	8,532,047	1885	36,561,390	1904	22,000,000
1867	10,288,600	1886	38,509,160	1905	22,000,000
1868	14,232,687	1887	31,564,231	1906	24,000,000
1869	15,413,970	1888	32,569,972	1907	15,000,000
1870	20,072,660	1889	34,008,370	1908	15,000,000
1871	22,187,188	1890	34,854,640	1909	16,000,000
1872	24,255,468	1891	33,183,475		

Note.—“Pulled” wool, 5,000,000 pounds, not included in table.

FIELD CROPS.

Grain. The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1898 and of rye since 1907:

Year	Wheat Bushels 60 lbs.	Barley Bushels 48 lbs.	Corn Bushels 56 lbs.	Oats Bushels 32 lbs.	Rye Bushels 60 lbs.
1898.....	12,403,700	12,263,461	1,184,040	1,943,304	.....
1899.....	29,666,666	14,046,087	1,536,975	1,845,787	.....
1900.....	20,933,333	19,769,760	1,351,975	1,477,771	.....
1901.....	28,751,500	26,162,780	1,850,793	4,887,374	.....
1902.....	18,759,490	23,489,065	1,839,150	5,148,583	.....
1903.....	14,880,990	21,075,000	1,777,162	5,756,964	.....
1904.....	10,895,216	24,418,604	1,350,000	5,250,000	.....
1905.....	5,660,360	22,094,186	1,204,000	4,735,000	.....
1906.....	8,333,330	26,162,790	1,100,000	4,300,000	.....
1907.....	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908.....	11,630,000	25,427,000	1,600,000	6,700,000	792,000
1909.....	11,550,000	31,270,000	1,740,000	6,280,000	842,000

Other Returns The yield and values of the principal cereal crops sown for the harvest of 1909, as given by the State Agricultural Society and other authorities, are as follows:

REPORT OF CROPS FOR 1909.

	Crop. Bushels.	Value.
Wheat.....	10,652,317	\$11,824,071
Barley.....	40,160,131	29,718,496
Oats.....	8,549,069	5,642,385
Rye.....	842,000	876,000
Corn.....	1,740,000	1,583,000
		\$49,643,952

It appears from department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley, which more than doubled it in value in 1909, and now equals in acreage and exceeds in yield and value all the other grain crops combined.

In the seven years ended in 1906, according to the Year Book of the Department of Agriculture, the acreage in barley increased 60 per cent, the yield 160 per cent, and the value 230 per cent. The increase still continues. The malting qualities of California barley give it a ready market abroad.

Oats are raised, in some parts of the State, more for hay than for threshing, while corn is but little used as food for work animals. Barley has long been the main grain food in California, but of late years oats have come into use to quite an extent.

WHEAT CROPS AND THEIR DISTRIBUTION.

The following table shows the rainfall at San Francisco for a series of years, and the wheat crops of California and distribution in cents:

SEASON	Rain- fall	Crop year	Crop	Exports	Local con- sumption	Carry over stock	Imports
1888-89.....	23.86	1889	25,174,940	17,161,280	6,340,000	5,036,220	768,540
1889-90.....	45.85	1890	18,889,680	17,388,400	6,300,000	1,977,940	1,740,440
1890-91.....	17.58	1891	21,095,440	16,586,380	6,000,000	2,451,000	1,964,000
1891-92.....	18.53	1892	20,445,960	13,489,480	6,300,000	5,727,580	1,520,100
1892-93.....	21.75	1893	19,904,640	11,883,540	6,500,000	7,878,980	1,630,300
1893-94.....	18.47	1894	14,335,844	11,095,480	7,200,000	6,456,000	768,540
1894-95.....	25.70	1895	15,730,004	13,613,980	6,800,000	2,930,700	1,168,560
1895-96.....	21.25	1896	17,452,041	13,452,693	7,000,000	1,990,273	2,060,224
1896-97.....	23.43	1897	18,351,786	12,907,953	6,800,000	3,388,606	2,754,501
1897-98.....	9.38	1898	7,341,220	4,259,913	7,000,000	3,585,606	4,115,693
1898-99.....	16.87	1899	19,462,047	9,455,737	6,860,000	8,615,583	1,883,667
1899-1900.....	18.47	1900	12,230,516	11,211,648	7,190,000	4,218,718	1,774,267
1900-01.....	21.17	1901	18,620,263	13,710,220	7,270,000	2,284,174	1,125,386
1901-02.....	18.98	1902	11,255,698	8,576,530	6,785,000	1,401,910	2,523,595
1902-03.....	18.28	1903	8,958,599	3,631,899	7,181,500	2,636,430	2,950,320
1903-04.....	20.59	1904	6,537,131	2,665,370	7,306,660	1,105,539	2,904,008
1904-05.....	23.45	1905	8,396,216	1,800,922	7,535,920	1,846,878	6,885,073
1905-06.....	20.42	1906	6,001,439	1,648,493	7,442,000	1,684,878	3,129,723
1906-07.....	26.17	1907	3,843,090	1,319,995	7,500,000	1,725,547	4,192,265
1907-08.....	17.35	1908	3,219,110	821,893	8,172,000	1,033,604	5,917,480
1908-09.....	25.57	1909	4,500,000	(Statistics not yet available.)			

HAY AND FORAGE CROP.

The hay crop of California is one of the most valuable agricultural products, being each year since 1905 worth over \$31,600,000. Alfalfa is increasing yearly in acreage and value. From three to five cuttings may be made yearly on irrigated ground, with an aggregate yield of from four to eight tons to the acre.

California grain (cut in the milk) is highly prized for hay and is sent East by the train-load for feeding race-horses. It often yields in value per acre more than if cut for grain, as in 1906 the average value per acre for grain hay was \$10.80 as against \$8.50 for grain.

Estimates based on returns made by the county statisticians and others give the acreage, yield and value of the hay crop since 1905, as shown below:

	Acreage.	Yield. Tons.	Value.
1905	2,383,165	3,697,373	\$31,687,180
1906	2,215,801	4,113,178	32,290,760
1907	2,189,100	4,009,054	32,072,959
1908 (Grain and grass, hay and alfalfa)	1,375,434	3,142,962	32,229,803
1909 (Grain and grass, hay and alfalfa)		3,857,315	36,644,973

Full returns for the hay crop of 1909 are not yet available, but partial reports show fair yield, and good prices raise the total value above the average.

Other Field Products. California was conspicuous in the production of potatoes and beans for the year 1909, and prices which obtained during the year made the aggregate return for these products over fourteen million dollars. The following exhibit gives return for the year in both quantity and value:

	Quantity.	Value.
Potatoes, Irish	7,800,000 bushels	\$6,006,000
Potatoes, Sweet	425,000 bushels	380,000
Beans	2,200,000 sks. (100 lb.)	8,000,000
Onions	1,300,000	1,950,000
Field and Garden Seeds, etc. ....	.....	2,250,000
		\$19,836,000

Beet Sugar. The Beet-Sugar industry of the State grows yearly in importance. In 1909 California produced over 28 per cent of the total product of the United States, and was second only to Colorado in output.

The existing factories and their locations are as follows:

Spreckels Sugar Co., Spreckels, Monterey County.
 Spreckels Sugar Co., Watsonville, Santa Cruz County.
 American Beet Sugar Co., Oxnard, Ventura County.
 American Beet Sugar Co., Chino, San Bernardino County.
 Alameda Sugar Company, Alvarado, Alameda County.
 Union Sugar Co., Betteravia, Santa Barbara County.
 Los Alamitos Sugar Co., Los Alamitos, Orange County.
 Sacramento Valley Sugar Co., Hamilton, Glenn County.
 Pacific Sugar Co., Visalia, Tulare County.
 Pacific Sugar Co., Corcoran, Kings County.

One plant, the Watsonville, belonging to the Spreckels Sugar Co., was idle during the season of 1909, and the plants of the Pacific Sugar Co., at Visalia and Corcoran, were operated in a small way only. The output of the nine active plants was 126,621 tons, which, at 4 cents per pound, represents \$10,129,680. The gain in 1909 over 1908 was 27,000 tons.

The growth of the beet-sugar industry in California is shown in the following exhibit for twenty-two years, beginning with 1888, that being the first year statistics were obtained and published by the State Board of Trade.

BEET SUGAR PRODUCTION OF CALIFORNIA.

Tons of 2,000 lbs.			
Year.	Tons.	Year.	Tons.
1888.	1,910	1899.	42,100
1889.	2,457	1900.	30,319
1890.	3,351	1901.	68,700
1891.	5,224	1902.	73,761
1892.	10,761	1903.	65,360
1893.	17,420	1904.	59,147
1894.	18,615	1905.	64,251
1895.	23,827	1906.	94,285
1896.	31,815	1907.	72,889
1897.	35,280	1908.	99,613
1898.	18,086	1909.	126,621

Tobacco Growing. The adaptability of soil and climate to the growing of tobacco has been successfully demonstrated in many sections of the State, though it is not yet grown to any considerable extent.

The peculiar character of the soil rendering fertilizing unnecessary, and the absence of frost during growing season are of interest in the cultivation and very important factors in handling and in curing the crop.

A planting of fifteen acres of Turkish tobacco was made in 1908 in Tulare County, and in both yield and quality the experiment was so encouraging that a much larger acreage was planted for 1909, and further extension is proposed.

Rice. From experiments made in the Sacramento Valley during recent years by the rice expert of the Department of Agriculture, the adaptability of soil and climate to the successful culture of rice has been demonstrated. Two tracts of twenty-five acres each were planted in 1908 in the vicinity of Biggs on black adobe lands. From one planting a yield of 3,000 pounds per acre was harvested. This rice was awarded the gold medal at the Seattle Exposition in 1909.

Mr. W. W. Mackie, of the Bureau of Soils, under whose direction the experiments were made, estimates that there are 600,000 acres of adobe, overflow and "goose" lands in the Sacramento Valley suitable for rice culture when a supply of water can be had.

Experts for the Japanese Government have investigated this district for rice culture and reported favorably on it. Mr. Mackie says: "At the present favorable outlook the rice industry should be successfully established in the Sacramento Valley in the future." The results obtained in 1909 seem to confirm his opinion and promise this remunerative industry to the many already established in California.

Cotton. The adaptability of soil and climate of California to the growing of cotton has been known for some years. Of late, planting has begun on a large scale.

In 1909 over 500 acres were planted in the Imperial Valley, Imperial County, with seeds from Georgia and Texas. The result was most gratifying, an average of over one bale, 500 lbs., to the acre being produced, some 600 bales in all, most of which found a ready market at the California Cotton Mills in Oakland. For 1910 the acreage will be largely increased.

All the cotton produced in California will find a ready home market and probably cause additional factories to be added to the few already in operation in the State.

A number of farmers in the Sacramento Valley also are to experiment in growing Egyptian cotton under direction of Government experts.

Flax and Hemp. The culture of these valuable textile plants has lately received an impetus in several localities that promises important developments.

Hop Crop. The hop crop in California, as elsewhere, varies greatly from year to year, influenced mainly by market prospects. The crop for 1909 according to statistics furnished the California Development Board was 69,688 bales, or 12,892,280 pounds, more than the crop of 1908, but less than the three preceding years.

Owing to excess of supply over demand for 1906 and 1907, the extensive prohibition movement throughout the country, and other causes, the decreased acreage planted for the season of 1908 was not largely increased in 1909.

HOP PRODUCTION IN CALIFORNIA, 1889-1909.

Year	Bales	Pounds	Year	Bales	Pounds
1889.....	35,230	6,517,550	1900.....	38,000	7,220,000
1890.....	28,130	5,204,050	1901.....	48,000	9,120,000
1891.....	36,151	6,687,935	1902.....	53,500	10,165,000
1892.....	39,800	7,363,000	1903.....	57,000	10,545,000
1893.....	51,400	9,509,000	1904.....	63,000	11,655,000
1894.....	67,500	12,287,500	1905.....	.....	13,135,000
1895.....	52,000	9,620,000	1906.....	108,000	20,000,000
1896.....	35,000	6,475,000	1907.....	90,000	16,650,000
1897.....	45,000	8,325,000	1908.....	63,200	11,692,000
1898.....	44,000	8,140,000	1909.....	69,688	12,892,280
1899.....	59,000	11,210,000			

MINERAL PRODUCTION.

Petroleum. The production of petroleum in California by districts for 1909 was as follows:

District.	Barrels.	District.	Barrels.
Fullerton-Brea Canyon	4,271,000	Kern River	14,508,292
Puente	38,000	Sunset	1,999,800
Whittier	848,800	Midway	2,234,456
Los Angeles	529,965	McKittrick	5,807,212
Newhall and Santa Paula.....	516,778	Coalinga	15,406,600
Summerland	66,300	Watsonville and Sargents.....	63,799
Santa Maria, Lompoc and Arroyo		Half Moon Bay.....	
Grande	8,080,488	Salt Lake District.....	3,821,233
		Total.	58,191,723

The output of petroleum for the years 1900 to 1909, inclusive, is as follows:

Years.	Barrels.	Years.	Barrels.
1900.....	4,000,000	1905.....	34,275,701
1901.....	8,000,000	1906.....	32,516,000
1902.....	13,973,500	1907.....	40,101,360
1903.....	24,337,828	1908.....	48,300,758
1904.....	24,423,860	1909.....	58,191,723

Production of petroleum in the United States shows a very material and constant increase during the last few years and is an important factor in industrial development.

TOTAL YIELD.
(Official Figures.)

Years.	Barrels.
1906	126,493,536
1907	166,095,335
1908	183,024,652
1909 (Figures not yet available.)	

California, in 1908, led the next nearest competitor in the country, Oklahoma, by 2,508,145 barrels, and supplied over 25 per cent of the total production of the United States. The output for 1909 was an increase of 25,675,723 barrels over 1906. California easily holds the position of the largest producer in the United States with her proportion of over 26 per cent of the total production.

PRODUCTION OF THE UNITED STATES FOR 1908.

State.	Barrels.	Value.	Average price per bbl.
California.	48,306,910	\$ 25,240,360	\$.5225
Colorado.	379,653	346,403	.913
Illinois.	33,685,106	22,640,881	.672
Indiana.	3,283,629	3,203,883	.976
Kansas.	1,801,781	746,695	.414
Kentucky and Tennessee.....	727,767	706,811	.971
Louisiana.	6,835,130	4,131,173	.604
Michigan and Missouri.....	15,246	22,345	1.466
New York	1,160,128	2,071,533	1.7856
Ohio.	10,858,797	14,178,502	1.306
Oklahoma.	45,798,765	17,694,843	.386
Pennsylvania.	9,424,325	16,881,194	.598
Texas.	11,206,464	6,700,708	1.7912
Utah and Wyoming.....	17,775	27,920	1.57
West Virginia	9,523,176	16,911,865	1.776
Total.	183,024,652	\$131,513,116	\$.722

Mineral Output. The usual comparative tables furnished by the State Mineralogist are presented, showing the mineral output of the State for a series of years.

The production of gold was above the average for past years, and \$2,033,631 more than in 1907. While there was an increase in the production of copper of 8,265,727 lbs., there was a decrease in the market value of \$990,610. Macadam, owing to the "good roads" movement, nearly doubled in production and more than doubled in value.

MINERAL PRODUCTION OF CALIFORNIA FOR SIX YEARS.

On Authority of Lewis E. Aubrey, State Mineralogist

PRODUCTS	1903			1904			1905			1906			1907			1908		
	Quantity	Value		Quantity	Value		Quantity	Value		Quantity	Value		Quantity	Value		Quantity	Value	
Asbestos.....tons	41,670	\$503,659		10	\$162		112	\$2,625		70	\$2,500		70	\$3,500		70	\$3,500	
Asphalt.....tons	21,944	53,106		56,187	672,910		40,804	60,290		77,756	777,560		79,718	1,056,400		105,443	1,082,376	
Bituminous Rock.....tons	68,860,000	661,400		45,280	175,680		24,753	60,436		16,077	45,204		24,122	72,835		30,718	109,818	
Borax (Crude).....lbs.	640,868	968,727		91,294,000	698,810		92,668,000	1,019,158		116,346,000	1,182,410		106,825,000	1,200,913		44,400,000	117,000	
Cement.....bbls.	150	2,250		989,538	1,539,807		1,265,558	1,791,916		1,286,000	1,941,250		1,613,563	2,585,677		1,629,615	2,359,692	
Chrome.....tons	214,408	1,999,546		128	1,845		40	600		817	2,859		302	6,040		350	6,195	
Clays (Brick).....M	90,972	99,907		281,750M	1,994,740		286,618M	2,278,786		277,762	2,538,848		362,167	2,438,951		332,872	2,506,495	
Clays (Pottery).....tons	98,026	265,383		84,149	81,953		138,805	180,146		167,267	162,283		160,385	254,454		208,402	325,147	
Coal.....tons	19,113,861	2,520,997		79,062	376,494		46,500	144,500		24,850	62,800		23,734	55,849		18,486	55,503	
Copper.....lbs.	250	4,750		29,974,154	8,969,995		16,997,489	2,650,605		28,736,448	5,522,712		32,602,945	6,341,387		40,868,772	5,350,777	
Fuller's Earth.....tons	.....	.....		500	9,500		13,844	38,000		440	10,500		100	1,000		50	1,000	
Gems.....ozs.	.....	.....		.....	71,000		.....	149,500		.....	497,090		.....	232,643		.....	208,950	
Gold.....ozs.	.....	.....		.....	19,109,600		.....	19,107,048		.....	18,732,452		.....	16,727,928		.....	18,761,559	
Granite.....cu. ft.	408,625	678,670		520,687	497,472		228,788	358,837		329,810	344,058		393,431	373,376		493,374	512,923	
Gypsum.....tons	6,914	46,441		8,850	56,582		12,850	54,500		21,000	69,000		8,900	57,700		34,600	156,400	
Infusorial Earth.....tons	2,708	16,015		6,950	112,282		3,000	14,400		2,480	14,400		2,531	28,948		2,950	32,012	
Lead.....tons	55	3,960		62	5,270		287	25,089		169	19,807		164	16,690		582	46,663	
Lime and Limestone.....tons	.....	592,268		.....	658,956		.....	878,647		.....	925,897		684,218	756,376		396,386	379,243	
Limestone †.....tons	606,185	486,172		532,690	414,668		1,440,455	942,503		1,066,164	870,887		230,385	406,041		273,890	297,284	
Macadam.....tons	1,891	20,515		2,850	9,298		8,933	16,221		4,082	40,820		1,544,317	1,082,302		2,939,901	2,446,768	
Manganese.....tons	1	25		60	900		.....	.....		.....	.....		6,405	57,720		10,582	80,822	
Marble.....cu. ft.	84,624	97,354		55,401	94,208		73,303	139,450		81,400	75,800		37,512	118,066		18,653	5,785	
Mineral Paint.....tons	2,870	8,720		270	1,935		754	4,025		250	1,720		355	1,720		335	2,250	
Mineral Water.....gals.	2,056,840	558,201		2,430,320	496,946		2,194,150	538,700		1,585,690	478,186		2,924,269	544,016		2,789,715	560,507	
Natural Gas.....cu. ft.	120,134M	75,234		144,437M	91,035		148,345M	102,479		168,175	109,489		169,991	114,759		842,833	474,584	
Paving Blocks.....M	4,854	134,642		8,977M	161,752		8,408M	134,847		4,203	178,432		4,304	189,347		7,660	334,780	
Petroleum.....bbls.	24,340,839	7,313,271		29,736,008	8,317,809		34,275,701	9,007,820		32,924,000	9,238,020		40,311,171	16,793,943		48,306,910	26,566,181	
Platinum.....ozs.	.....	1,052		.....	1,849		.....	8,320		.....	1,647		300,07	6,255		107,001	610,335	
Pyrites.....tons	24,311	94,000		15,048	62,992		15,503	63,958		46,689	145,895		82,370	281,774		107,001	610,335	
Quartz Crystals.....lbs.	32,094	1,335,954		28,876	1,086,828		24,658	886,081		19,516	712,884		4,000	10,000		4,000	10,000	
Quicksilver.....flasks	1,610,440	2,337,419		1,764,208	1,227,209		1,183,802	774,267		489,208	547,519		17,379	683,178		18,039	763,520	
Rubbe.....tons	102,995	211,365		95,968	187,800		77,118	141,925		101,650	213,238		744,371	832,713		1,069,044	796,006	
Salt.....tons	858,002	7,525		10,004	12,276		9,257	13,375		8,121	13,375		88,663	310,967		121,764	281,469	
Sand (Glass).....tons	.....	685,309		868,487	567,131		802,313	488,268		182,076	164,068		159,573	148,148		93,301	22,045	
Serpentine.....cu. ft.	.....	800		200	2,310		847	1,694		.....	1,000		1,000	3,000		.....	56,151	
Silver (Com'l value).....ozs.	Com'l val.	517,444		.....	873,525		.....	678,494		.....	817,850		1,138,358	751,646		.....	873,057	
Slate.....squares	10,000	70,000		6,000	50,000		4,000	40,000		10,000	100,000		7,000	60,000		6,000	50,000	
Soda.....tons	*18,000	27,000		12,000	18,000		15,000	22,500		12,000	18,000		.....	.....		9,600	14,400	
Tungsten.....lbs.	.....	.....		.....	.....		52	18,800		.....	189,100		.....	190,587		.....	37,750	
Zinc.....lbs.	.....	.....		.....	.....		.....	.....		206,000	12,556		.....	10,598		.....	3,544	
Totals.....	.....	\$37,605,348		.....	\$43,680,633		.....	\$43,065,497		.....	\$46,776,085		.....	\$55,697,545		.....	\$66,363,150	

* Crude. † Up to 1907 Lime and Limestone were reported under one head.

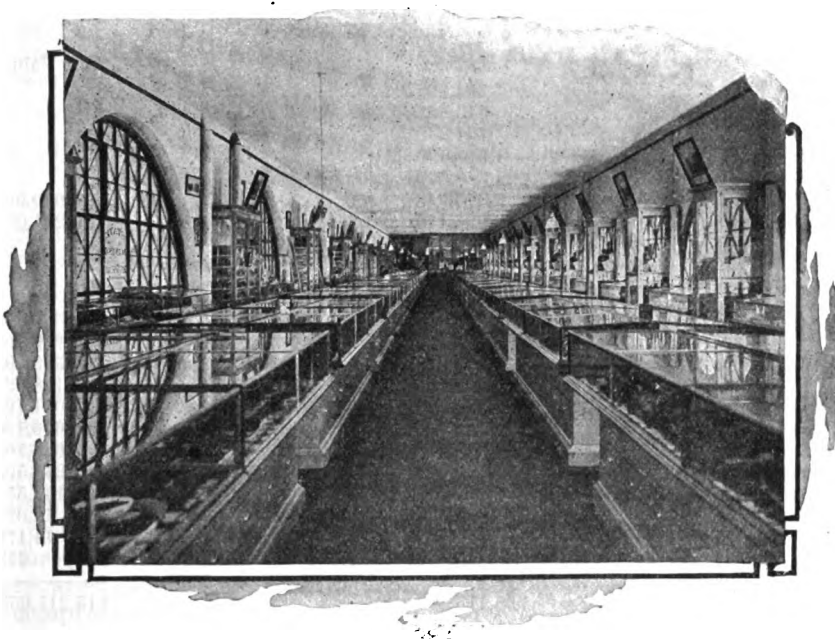


EXHIBIT CALIFORNIA STATE MINING BUREAU.

FOREST PRODUCTS.

Lumber. Report from some of the large mills and a number of the small ones, of the cut for 1909 were not received. The cut for 1909 as reported falls short of that of 1908 some 50 million feet, but is nearly 60 million feet greater than reported for 1907.

The mills failing to send in reports are mostly situated east of the Coast Range.

The shingle cut reported is more nearly normal; as the mills are fewer and operate on a large scale.

LUMBER PRODUCTION OF CALIFORNIA—1899-1908.

(As reported to California Development Board.)

In Thousand Feet.

Year	Redwood	Sugar Pine	Y. Pine	Spruce	Cedar	Fir	Wh. Pine	Shingles M	Shakes etc. M
1899	272,283	50,736	211,115	21,963	4,882	20,508	.....	.....	.....
1900	327,916	67,920	181,272	20,204	4,049	49,583	.....	.....	.....
1901	287,001	83,467	152,565	32,943	33,550	38,259	.....	.....	.....
1902	343,142	68,749	180,726	33,488	2,424	34,648	.....	.....	.....
1903	463,463	48,939	264,792	12,192	5,478	55,671	.....	.....	.....
1904	433,803	61,332	260,278	11,019	3,157	28,384	.....	.....	.....
1905	381,533	39,708	273,529	12,814	3,043	37,291	.....	.....	.....
1906	318,117	31,858	22,641	7,716	2,876	52,191	108,614	3,838	233
1907	333,393	36,989	51,274	20,156	7,018	66,359	91,610	22,292	4,776
1908	436,714	40,230	132,001	13,048	4,231	75,611	126,767	682,496	19,982
1909	410,688	45,651	76,639	47,822	16,409	6,917	76,772	507,750	8,253
Total all kinds 1899							581,448,895 feet		
" " " 1900							650,981,012	"	"
" " " 1901							627,770,893	"	"
" " " 1902							663,179,680	"	"
" " " 1903							852,638,197	"	"
" " " 1904							799,829,687	"	"
" " " 1905							747,918,754	"	"
" " " 1906							544,013,798	"	"
" " " 1907							611,368,000	"	"
" " " 1908							828,602,000	"	"
" " " 1909							670,898,453	"	"

CALIFORNIA DEVELOPMENT BOARD

LUMBER CUT IN CALIFORNIA FOR YEARS FROM 1880 TO 1908.

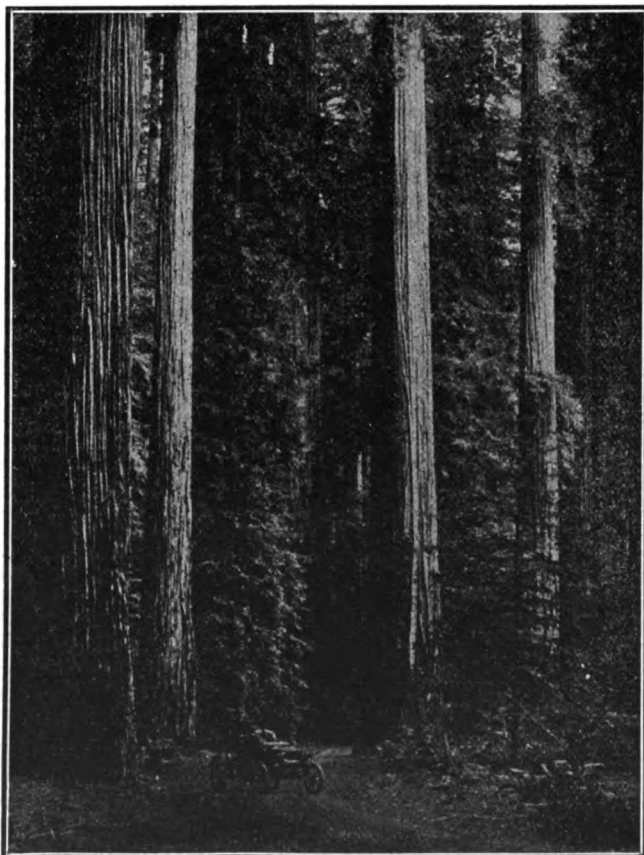
From Government Report.

	M. Feet.	Mill Value.
1880	304,795	
1890	515,823	
1900	734,232	
1905	1,077,499	
1906	1,348,599	
1907	1,345,943	23,640,966
1908	996,115	15,211,055

KINDS OF LUMBER CUT IN CALIFORNIA.

From Government Report, 1908.

	Lumber—Ft.	Value.
Redwood	404,802,000	\$6,339,199
Western Pine	318,406,000	5,148,625
Douglas Fir	87,224,000	1,011,798
Sugar Pine	92,500,000	1,676,100
White Fir	56,040,000	628,769
Spruce	22,532,000	245,599
Cedar	12,790,000	134,551
Western Hemlock	925,000	12,025
Oak	886,000	14,176
Ash	10,000	213
	996,115,000	\$15,211,055



IN THE REDWOODS.

According to Government reports the lumber cut of the Pacific Coast was 1,406,355 M. feet less in 1908 than in 1907. This was due to depression in business, and the same cause operated to keep many mills idle in 1909. For 1909 the Government has not yet issued a report. The California cut showed a decrease for 1908 as compared with 1907 of 350,000 feet.

Redwood. It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "Clear Lumber." The redwood (*Sequoia Sempervirens*) is indigenous to California, and except for a few stunted trees in Japan, is found in no other country. This growth covers a tract on the northwestern coast of California, beginning at the northern line (there being not over 2,000 acres over the line in Oregon), and occupies a continuous district from the seacoast eastward to the crest of the Coast Range of mountains about 240 miles long (north and south) and from 10 to 20 miles wide.

In this district there were originally about 1,200,000 acres of redwood timbered lands, comprising practically the world's entire supply of this most magnificent wood. The estimated yield was from sixty to seventy billion feet of superb merchantable timber, besides from 10 to 20 per cent in volume of by-products—split ties and posts, wood, some fir and tanbark.

Some thirty-four mill plants have grown up since 1860 in this district and they now own one-half of the timbered acreage. These mills have removed probably not more than 20 per cent of the original standing timber having during the fifty years averaged 220,000,000 feet per annum. The cut since 1903 from this district (comprising the counties of Del Norte, Humboldt, Mendocino and Sonoma), has averaged nearly 400,000,000 feet.

Facts found in Department Circular 129 issued by Mr. Pinchot, are again reproduced:

The lumber cut of the United States for 1907 was thirty-seven and one-half billion feet, as against thirty-four and three-quarters billion feet in 1900, being more than double that of 1880, while the increase of population in the decade ending 1900 was but 52 per cent. The United States is now using annually 400 board feet of lumber per capita, while the average for Europe is but 60 feet per capita.

There have been many attempts to ascertain the total stumpage of the United States. It is variously estimated from 1,000 billion board feet to 1,970 billion board feet. The following estimate is given by the "Pacific Lumber Trade Journal" of January, 1907, as to the Pacific Coast States and Idaho, Montana and British Columbia:

	M Board Feet
Oregon	225,000,000
Washington	195,658,080
California	180,000,000
Idaho and Montana.....	100,000,000
British Columbia.....	150,000,000
Total	850,658,080

At the low estimate of \$3.00 per thousand feet for stumpage, the value of timber in California as it stands in the forest is \$540,000,000. This is a large sum, but is doubtless within the truth.

The estimated wooded area of California is 28,608,000 acres. Approximately 24,058,050 acres are in National forest reserves and 4,549,950 acres in private ownership or unreserved.

The conservation of the forest areas of California is most intimately related to the welfare of the State. No greater calamity could befall the State than the denudation of the wooded lands. On the other hand, incalculable benefit will come from wise conservation of the forests and a reforestation of the already denuded areas. Conservation of natural resources must of necessity include the forests and the streams. Happily a wise governmental policy has saved enough of these areas to give assurance that their relation to the common welfare will not be seriously impaired.

Railways. The year 1909 was an important one in railroad circles. Much new work was begun and activities were resumed on work that had been partially or entirely suspended during the financial depression of the previous year.

Work on the Rocklin-Colfax cut-off on the Southern Pacific lines, estimated to cost \$10,000,000, was inaugurated early in the year and is being pushed vigorously.

The electrification of the suburban lines of the same company was begun early in the year and is expected to cost \$10,000,000.

Additions and extensions were made on several lines operated by the company in various parts of the State. Work was resumed on the 108-mile gap between Willits and Shively on the Northwestern Pacific, and will be practically completed by end of 1910, giving Eureka and the large resources of the intermediate country rail connection with San Francisco.

The new mileage brought into operation during the year and that put under construction is as follows:—

	New Mileage.	Under Construction.
Southern Pacific	78.72	65.03
Western Pacific	222.18	.....
Atchison, Topeka and Santa Fe.....	.....	110.56

According to the figures furnished by the State Railroad Commission the total mileage in the State is 7516.61 miles owned and controlled by thirty-three separate companies.

The mileage operated by the principal companies is as follows:

Southern Pacific System.....	3,651.20 miles
Santa Fe System.....	1,287.89 "
Northwestern Pacific.....	374.99 "
San Pedro, Los Angeles & Salt Lake.....	73. "
Western Pacific.....	320.493 "
Yosemite Valley Railroad.....	79.08 "

The amount of money invested in California railroads is out of all proportion to the mileage, for one mile in the mountains costs more than twenty miles in the prairie states.

The completion of the Western Pacific (which enters the State by Beckwith Pass, 2,000 feet lower than the Central Pacific route) gives San Francisco a third transcontinental line, and already has given new life to the counties through which its lines run, stirring their energies and awakening the people to the possibilities that lie on every hand.

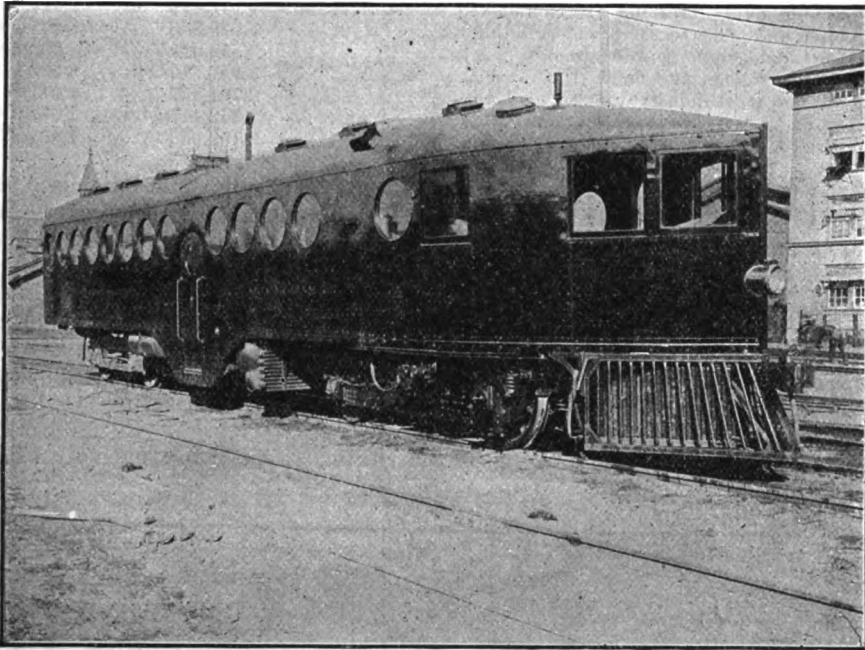
Electric Roads. There are thirty-five electric railway companies operating in the State, covering about 1600 total mileage. They are distributed as follows:

ELECTRIC ROADS.	
District.	Companies.
Bay Counties	10
Valleys south of Tehachapi.....	10
Coast towns, San Diego to Eureka.....	5
San Joaquin Valley	5
Sacramento Valley	5
Total.....	35

The mileage of the principal electric roads is as follows:

Pacific Electric and Los Angeles Interurban (double)	534.47
United Railroad, San Francisco.....	244.
Oakland Traction, Consolidated.....	169.41
Northern Electric (Freight and Passenger Road)	125.

Over 650 miles of additional electric road construction is projected in the State, mainly interurban lines, largely south of the Tehachapi Range and in the San Joaquin and Sacramento Valleys. A company recently formed proposes to build an electric line 35 miles long from Lakeport, in Lake County, to Pieta, on the Northwestern Pacific Railroad.



NEW MOTOR CAR INSTALLED BY SOUTHERN PACIFIC ON BRANCH LINES.

Manufacturing. Statistics relating to manufactures in the State are not easily obtainable to an extent that enables the Board to make full comparative tables of output or growth. Tables of the most important interests are given only. Manufacturing is a feature that should receive more attention in future than has been possible to give it in the past. San Francisco and the State as a whole presents peculiar advantages in this branch of industry, but owing to limited population and remoteness from large centers of consumption, growth has been retarded. Among the more conspicuous manufactures in the State may be mentioned: Ship building, Iron and Steel, Machinery, Sugar Refining, Brewing, Cordage, Twines, etc., Boots and Shoes, Clothing, Leather, Gloves, Hats and Caps, Flour and Cereal Products, Crackers, Doors, Sashes and Blinds and Wines. The manufacture of Wine is of vast importance and the output of the wineries for the year under review exceeds that of 1908-09 greatly, and is larger than any previous year in the history of wine production in the State. This is shown in the table given elsewhere in the report.

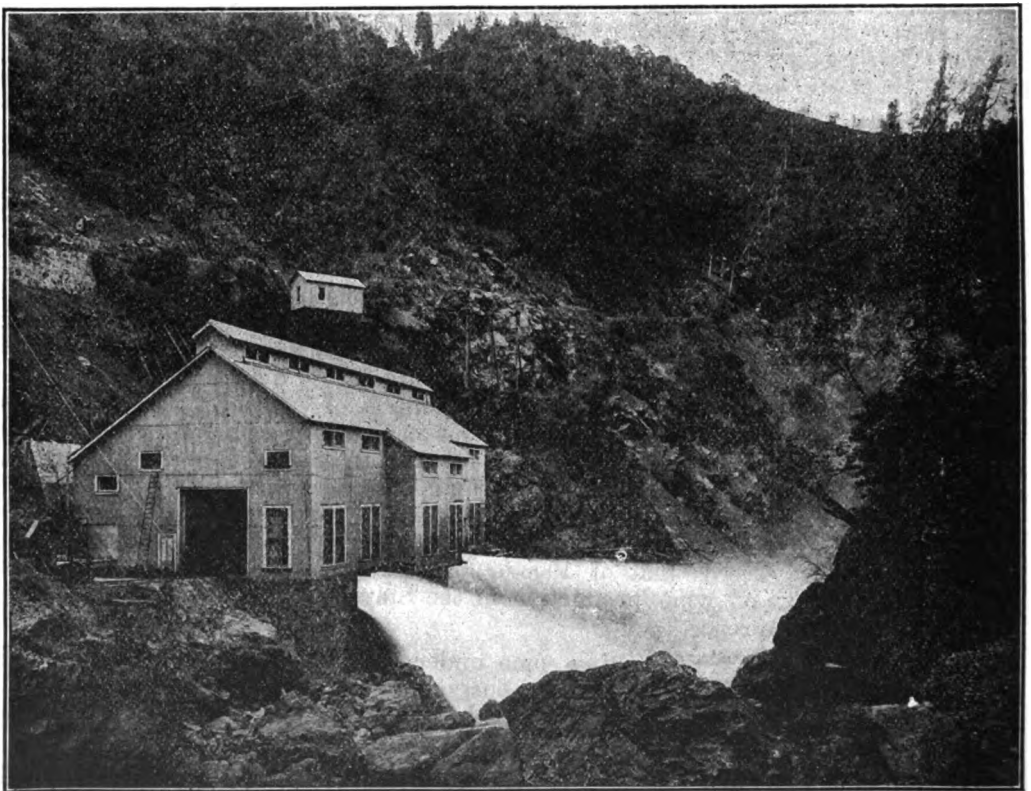
Fruit canning and fruit packing come under the head of manufacturing and the output of the canning and packing houses aggregates many millions each year. In the department of dried fruit is included raisins, for which California has become famous.

The following figures taken from the census report of 1905 and based on the data of 1904 show the relative value of the products of fifteen manufacturing industries in the San Francisco district:

	Value Output.	Average Employed.
Slaughtering and meat packing.....	\$15,486,299	673
Printing and publishing.....	10,187,664	3,113
Foundry and machine shop products.....	9,483,767	3,692
Bread, other bakery products.....	5,550,506	1,542
Clothing (men's and women's).....	4,930,646	2,285
Coppersmithing and sheetiron working.....	4,768,646	1,526
Lumber, planing-mill products.....	4,690,703	1,676
Liquors, malt and vinous.....	4,499,830	636
Canning and preserving fruits and vegetables.....	4,151,414	1,471
Coffee and spice roasting and grinding.....	3,979,865	275
Flour and gristmill products.....	3,852,041	248
Leather, tanned and finished.....	2,937,510	638
Iron and steel industry.....	2,791,877	1,051
Textiles.....	2,342,117	1,071
Tobacco, cigars and cigarettes.....	2,159,650	1,301

The total value of the products of manufactures in the San Francisco district according to the same report was \$159,033,080, an increase of 33.4 per cent over the figures reported in 1900. The figures of the seven surrounding counties, \$79,070,583, give an increase over 1900 of 41.3 per cent. The same rate of increase for the last five years would make the output of manufactures for San Francisco over \$212,000,000 and the surrounding counties \$113,760,000, of which Oakland, in Alameda County, claims \$58,301,297. Los Angeles is credited with over \$62,000,000, and Sacramento, San Jose, Stockton, and Fresno follow in order named. The number of workmen employed in San Francisco and Oakland is estimated at 83,850, with an annual pay-roll of over \$70,000,000.

The total manufacturing output of the State can be conservatively estimated at \$550,000,000.



GENERATING ELECTRICITY ON A MOUNTAIN STREAM.

Water-Power and Electrical Development.

Closely connected with the future of manufacturing development is the fuel and water-power supply convertible into electrical power. The statistics of oil production are given on a preceding page. The following extract from Water Supply Paper No. 234 in the report of the U. S. Geological Survey is of much interest.

CALIFORNIA'S WATER-POWER

DEVELOPED.			UNDEVELOPED.		
Source.	Wheels.	Horsepower.		Minimum development.	Maximum development.
Sacramento River	576	280,735	Sacramento River	2,420,000	4,580,000
San Joaquin River	159	86,224	San Joaquin River (includ-		
Minor streams, southern.....	74	50,183	ing Tulare lake drainage)	759,000	3,140,000
Minor streams, northern.....	176	25,440	Minor streams, northern..	600,000	1,200,000
Sierra Nevada drainage.....	74	17,737	Sierra Nevada drainage...	132,000	202,000
San Francisco Bay	11	6,455	Minor streams, southern..	36,400	88,300
Totals	1,070	446,744	Totals	3,947,000	9,210,300

With abundant oil for fuel for manufacturing power and motive-power on the one side, and with over 9,000,000 horsepower in water-power yet to develop, and a widening of markets both at home and in the Orient, California can face her industrial future with confidence.

Climate. The compilation from Government reports giving tables of the climatological conditions existing in various portions of the State, which have appeared in former reports are as interesting now as formerly and the tables are again reproduced.

The fact is well established that no substantial difference exists by reason of latitude—the table shows this conclusively. The same kinds of fruit are grown in commercial quantities as far north as Shasta County as are grown 700 miles south, in Los Angeles County. There is undoubtedly a softness and mildness immediately along the southern coast not enjoyed along the immediate northern coast, and the climate is more equable. But, economically speaking—i. e., from the standpoint of the producer—there is substantially the same climate along the Coast everywhere in the State and in all interior latitudes at like elevation. Rainfall, however, decreases from north to south.

Conclusion. In retiring from active participation in the work of the Board after many years as its executive head, a satisfaction is experienced in the thought that the work done has contributed toward the growth of the State and the development of her industries. The hope is expressed that the same spirit of loyalty and patriotic interest in the work of the California Development Board will continue as has been shown in the work of the California State Board of Trade and that large and comprehensive plans will characterize every effort.

ARTHUR R. BRIGGS, President.

A. L. McDONALD, Secretary.

Approved by the Board and ordered printed.

Note.—For data and statistics used in this report we are indebted to the Controller of U. S. Treasury; Prof. Alexander G. McAdie, California Section U. S. Weather Bureau; U. S. Department of Agriculture; State Agricultural Society; State Superintendent of Banks; State Mining Bureau; State Controller; San Francisco Clearing House; California Fish Commission; Superintendent of Public Instruction; State Dairy Bureau; State Railroad Commission; Auditing, Freight & Engineering Departments of Southern Pacific, Santa Fe and Western Pacific Railroads; United Railroads of San Francisco; Wine & Spirit Review; Petaluma Poultry Journal; California Fruit Grower; Pacific Rural Press; Pacific Lumber Trade Journal; California Wine Association; Italian Swiss Colony; Gundlach Bundschu Co.; Frank D. Flint & Co.; Adolph Koshland; George Shima; Peter J. Shields; W. E. Sprott of the Tulare County Citrus Fruit Exchange; California Produce Co.; Campodonico Burns Correa Co.; E. W. Maslin; E. H. Tryon; E. Clemens Horst; J. K. Armsby Co.; Griffin & Skelly Co.; Castle Bros.; many lumber dealers; the several beet-sugar refineries; Merchants' Exchange; Chamber of Commerce of San Francisco; Boards of Trade and Chambers of Commerce of various counties of the State; Board of Supervisors and Board of Public Works, San Francisco; Boards of Supervisors of various counties of the State; Sacramento Valley Development Association; and many growers, producers and others throughout the State.

SUMMARY OF PRODUCTS AND VALUES.

Summary of values of products of the soil for 1909, marketed by the producer and for the most part shipped out of the State. Consumption by producers not included except in case of animals slaughtered for consumption by rural population.

Compiled from data gathered from transportation companies and other authoritative sources.

	Value.	Total Value.
Orchard Products—		
Fresh Deciduous Fruits	\$12,228,000	
Citrus Fruits	32,421,600	
Dried Fruits, including Prunes	17,731,560	
Canned Fruits	9,141,003	
Olives and Olive Oil	1,750,000	
Nuts	2,745,000	
Vineyard Products—		\$ 76,017,163
Table Grapes	4,116,000	
Raisins	4,232,500	
Wine and Brandy	23,000,000	
Garden Products—		31,348,500
Fresh	6,187,500	
Canned	2,224,720	
		8,412,220
Dairy Products		27,329,400
Poultry Products	14,980,569	
Honey, Wax, etc.	1,221,760	
Farm Products—		16,202,329
Barley	29,718,496	
Wheat	11,824,071	
Oats	5,642,385	
Corn	1,583,000	
Rye and other Grain	876,000	
		49,643,952
Grain and Grass Hay and Alfalfa		36,644,973
Hops		2,320,610
Beet Sugar		10,129,680
Other Field Crops—		
Potatoes	6,006,000	
Potatoes, Sweet	380,000	
Beans	8,000,000	
Onions	1,950,000	
Seeds and Sundry other	2,250,000	
Kaffir Corn, Broom Corn, etc.	350,000	
Melons	2,250,000	
		21,186,000
Fish and Game		5,000,000
Forest Products—		
Lumber	10,734,375	
Shingles, Shakes, Laths, etc.	900,000	
Ties—Tan Bark	2,500,000	
Poles, Piles, Mine Timbers, etc.	2,000,000	
Cordwood, etc.	1,800,000	
Add 25 per cent not reported	4,483,593	
		22,417,968
Minerals—		34,915,033
Petroleum (for 1909)		
Gold (1908)	18,761,559	
Other Minerals (1908)	21,035,410	
		39,796,969
Farm Animals and Products—		
Increase	14,535,000	
Slaughtered for market	18,000,000	
Slaughtered in rural districts	9,500,000	
Wool	2,400,000	
Hides, Tallow, etc.	2,800,000	
		47,235,000
Sundry others not included above—		
Nursery Products	1,800,000	
Florist Products	800,000	
Fruits marketed in cities	9,500,000	
Vegetables marketed in cities	13,000,000	
Cider, Vinegar, etc.	1,600,000	
		26,700,000
Grand total.....		\$455,369,837

CLIMATOLOGICAL STATISTICS

TEMPERATURE AND RAINFALL

COMPARATIVE TABLE OF THE TEMPERATURES AND RAINFALL IN CALIFORNIA, 1883-1909.

Prepared by the United States Weather Bureau Office at San Francisco.

Year.	RED BLUFF.				SACRAMENTO.				FRESNO.				LOS ANGELES.				SAN FRANCISCO.			
	Mean.	Max.	Min.	Rainfall.	Mean.	Max.	Min.	Rainfall.	Mean.	Max.	Min.	Rainfall.	Mean.	Max.	Min.	Rainfall.	Mean.	Max.	Min.	Rainfall.
1883	61.5	107	19	13.76	59.9	104	22	13.48	.....	.....	.....	.....	61.6	104	28	14.14	55.6	95	36	15.43
1884	60.8	107	22	28.06	59.8	100	21	34.92	.....	.....	.....	.....	60.8	102	34	40.15	56.7	83	35	38.82
1885	64.4	108	33	29.63	62.5	105	34	20.72	.....	.....	.....	.....	63.0	108	36	10.53	57.8	87	43	24.90
1886	63.2	109	30	17.21	60.3	105	27	18.17	.....	.....	.....	.....	61.1	98	32	16.72	57.3	94	41	20.02
1887	64.4	112	27	13.60	60.3	100	28	13.34	.....	.....	.....	.....	61.7	100	34	16.02	56.5	97	33	19.04
1888	64.5	109	18	24.94	61.4	108	19	18.46	65.4	111	20	8.76	60.7	99	31	20.82	57.3	93	29	23.03
1889	63.3	111	26	32.87	60.9	104	31	27.48	64.3	112	27	12.27	63.0	103	32	33.25	57.9	89	39	36.94
1890	61.5	110	22	25.60	59.4	102	27	20.95	62.6	111	24	8.36	63.6	105	30	12.69	53.3	86	36	25.43
1891	62.4	114	26	23.04	60.6	106	26	15.63	63.0	114	26	8.94	63.0	109	33	12.84	56.6	100	37	21.11
1892	62.2	108	23	33.48	60.2	106	26	23.60	63.1	112	27	8.75	61.6	99	33	18.72	56.0	92	38	22.08
1893	60.6	106	27	24.36	58.8	103	28	16.59	61.0	109	28	9.40	61.5	92	31	21.96	54.3	90	36	17.91
1894	62.0	110	27	26.98	60.3	108	26	22.61	62.6	109	25	12.48	60.3	99	32	7.51	55.1	94	36	24.32
1895	62.2	108	28	22.57	60.2	102	28	17.38	62.5	110	26	10.39	61.7	100	34	12.55	55.6	89	38	17.13
1896	62.5	109	26	28.46	60.7	104	28	25.06	63.7	111	28	11.02	63.1	103	35	11.80	55.9	91	33	28.25
1897	62.0	109	27	20.08	59.8	105	24	15.32	62.3	110	23	8.41	61.8	97	30	14.28	55.0	92	38	16.40
1898	62.5	112	24	12.91	59.5	110	26	10.04	63.1	114	24	4.99	62.5	99	31	4.83	45.6	89	36	16.40
1899	62.4	109	26	28.07	59.6	102	30	21.14	62.6	111	24	10.54	62.0	100	33	8.69	55.0	94	34	23.23
1900	62.4	109	29	21.77	59.9	102	30	17.91	62.8	109	26	11.06	62.5	96	37	11.30	56.2	92	40	15.33
1901	63.1	111	25	25.51	60.1	105	26	18.52	63.5	110	27	8.07	62.1	97	31	11.96	55.4	91	37	19.75
1902	61.4	115	28	35.53	59.2	107	29	17.88	62.2	110	24	7.91	61.2	94	32	13.12	55.4	83	38	19.18
1903	61.5	108	27	22.93	59.4	102	29	14.70	62.2	108	25	6.19	62.2	97	32	14.77	55.3	96	37	18.33
1904	62.8	108	29	33.96	60.1	102	32	20.99	63.7	109	28	13.33	63.9	97	35	11.88	56.4	101	35	24.72
1905	62.9	113	25	23.35	59.7	110	28	14.97	63.0	115	26	7.27	62.6	101	33	19.19	56.3	98	39	16.24
1906	63.0	110	30	40.37	60.4	104	30	30.72	63.2	111	27	16.04	62.9	105	34	21.46	56.2	85	40	26.34
1907	61.2	101	27	24.66	59.6	99	31	20.05	62.5	103	30	9.00	62.6	103	35	15.30	56.4	90	36	22.47
1908	62.3	114	25	17.92	59.7	103	28	11.21	63.0	114	29	7.00	61.9	96	37	13.74	55.0	89	35	16.42
1909	62.1	106	29	34.99	59.7	101	29	24.87	62.8	107	30	16.47	61.4	103	37	23.92	55.2	94	38	31.36

Note—Red Bluff, located in the northern extremity of the Sacramento Valley; Sacramento, central of that valley; San Francisco, representing the coast region; Fresno, central of San Joaquin Valley; Los Angeles, representing Southern California.

APPENDIX

The appended articles are furnished by recognized authorities on the subjects treated, and answer many inquiries made by homeseekers.

CLIMATE OF CALIFORNIA.

By N. P. Chipman.

California must be counted among the most valuable possessions of the United States for many reasons; chiefly, however, because of the matchless climate of the State and the high economic value it bestows upon a large area of arable land whose coast line measures 850 miles from point to point (about 1,000 miles of actual coast), the average width of the State being about 200 miles. The south boundary line of latitude emerges on the Atlantic Coast near Savannah, Georgia, and the north parallel near Boston, Massachusetts. Between these two latter points lie ten states of the Union. It counts for something to the nation that this extended coast line, on the Pacific Ocean, is fortified by a region capable of supporting many millions of people and that the coast to the Canadian boundary is backed by a country of almost boundless resources.

It is not generally appreciated that all of France, all of Italy north of Rome, and half of Spain lie north of the north boundary of California. This relative position on the west coast of our continent would suggest a mild climate, but not necessarily its unique and exceptional character. It is the purpose of the writer to bring to public attention the principal features of this climate and to show its economic value.

Professor Alexander G. McAdie, District Forecaster of the United States Weather Bureau, San Francisco, states that the climate of California is controlled by four great factors: (1) The movements of the great continental and oceanic pressure areas (commonly called "high" and "low"), together with the movements of individual pressure areas; (2) the prevailing drift of the atmosphere in temperate latitudes from west to east; (3) the proximity of the Pacific Ocean, with a mean annual temperature near the coast line of 55 degrees, Fahrenheit, a great natural conservator of heat, to which is chiefly due the moderate range of temperature along the coast from San Diego even to Tatoosh Island (extreme northwest coast of Washington); and (4), the exceedingly diversified topography for a distance of 200 miles from the coast inland. To this diversified topography is due the fact that California is a land of many climates, "from the hottest subtropical to the cold temperate, and from the driest desert to the most humid regions of the higher mountains and northern coast."

The Sierra Nevada Mountains form a natural boundary line on the east, rising gradually from the west to a height of from 8,500 to 14,000 feet, much above the snow-line, and falling off to the Nevada plateau, which is about 4,000 feet above sea-level. The Coast Range Mountains form a broad belt, traversing the entire coast, and consist of two or three parallel ranges from 3,200 to 5,000 feet high, and between these ranges are many rich valleys, some of large extent. The Coast Range merges into the Siskiyou Mountains on the north, a connecting link with the Sierra Nevada, crowned by Mount Shasta; and the Tehachapi Mountains, far to the south, form another connecting link.

Between the Sierra Nevada and the Coast Range mountains and these connecting mountain links lies the great central valley of California, about 400 miles long and from 50 to 60 miles wide; an agricultural district of great fruitfulness, comprising quite one ninth of the State. There is but little waste land in it. The northern portion is blessed by ample rainfall, and the southern part, when watered, is everywhere very productive, as is the entire valley. The Sacramento River runs south through the northern portion (Sacramento Valley), rising near

Mount Shasta; the San Joaquin River runs north through the southern portion (San Joaquin Valley); the two rivers uniting near the middle of the great valley and flowing westward into San Francisco Bay, and thence through the "Golden Gate" into the Pacific Ocean.

There is here a wide break in the Coast Range through which the summer trade winds find their way into the interior, an important factor in the climatic conditions of the valley. This sea-breeze blows up stream, north into the Sacramento Valley and south into the San Joaquin Valley, thus tempering the heat of the great valley. This influence, together with the dryness of the atmosphere, renders the occasional high temperatures of these two valleys more easily endurable at 110 degrees than is 95 degrees in the humid regions of the Eastern States.

South of the Tehachapi Mountains the Sierra Nevada Mountains continue at less elevation, and are locally called Sierra Madre. The wonderfully developed region known as Southern California lies west. On the east is the Mohave desert, and south and east the Colorado desert; important regions of the State as yet but partially developed, but of great fertility by the application of water, which the genius and enterprise of the people are rapidly bringing in touch with the land. As in the north, the breaks in the Coast Range and in the Sierra Madre become important factors in modifying the climate of the interior. In Southern California and in Central California (San Joaquin Valley) extensive irrigation systems already in operation supply the comparative lack of rainfall. Irrigation is also being extensively developed in the Sacramento Valley.

Winds. The prevailing winds come from the ocean and are principally from the southwest landward, producing a cool summer climate along the immediate coast. Fogs sometimes sweep in from the ocean, more or less unfavorably affecting the enjoyment of the climate, but by their moisture contributing to the growth of vegetation. These fogs are less harsh on the south coast. The heat rising from the great valley draws a strong current from the trade winds through the Golden Gate that divides as it passes and extends south to the Tehachapi Mountains and north to Mount Shasta, rendering the air of the valley more delightful. The same drift of the trade winds tempers the air far into the interior in Southern California. The high mountain barrier on the east, through the length of the State, deflects the cold winds that sweep down over the Nevada plains in winter from Alaska and prevents their entrance into the valley regions of California. Dry north winds sometimes blow through the great valley in summer, raising the temperature, and are occasionally injurious to growing crops, but they seldom continue more than three or four days, when they are succeeded by the balmy and cool ocean breezes. Along the immediate coast the average winter and summer temperature differs only about four degrees, and one of the characteristic features of the San Francisco climate is exemplified by the sight of furs worn by ladies over summer garments, and fires in summer are not infrequent.

All over the Coast, however, there are thousands of sheltered nooks and small valleys and sequestered spots, where the fogs and harsh winds of the Coast have no appreciable effect and where the climate is charming and sunny to the last degree, both winter and summer.

Rainfall. The terms "winter" and "summer," as commonly used in the Eastern States, have no application in California. The year is more properly divided into "rainy season" (winter) and "dry season" (summer). Practically all the rain falls from about the first of November until April; the remaining months of the year are rainless, except in some parts of the mountains and on the Coast north of Cape Mendocino, where occasional summer showers occur. Cereal crops mature in early summer after rain ceases, and no housing of crops is necessary for protection against rain in harvest time.

The rainfall of California is a characteristic feature of the climate. A word as to its source and cause will be interesting. Professor McAdie points out that over the North Pacific Ocean in winter there exists an area of low barometer (lat-

itudes 40 and 60 degrees north and 130 degrees west to 140 degrees east longitude), while an area of high pressure overlies the greater part of North America with a southwest extension to the tropics and west to the one hundred and sixtieth meridian. He says: "We shall find that typical wet winters on the California coast occur when this great North Pacific 'low' extends well eastward, overlying the continent west of a line drawn from San Francisco to Calgary (Canada). At the same time the great continental high area apparently recedes to the southeast. On the other hand, the pressure distribution characteristic of a 'dry' winter on the California coast is marked by the prevalence of the continental 'high' over the entire country west of the Rocky Mountains."

Our winter rain storms (barring an occasional one coming in from the ocean unheralded) have their origin off the coast of Vancouver, and curiously enough are attended in the Sacramento Valley by south winds. The storms diminish in intensity as they travel south, tapering off as they approach Southern California. The table will show this graphically, from which will be seen also the great variations of rainfall within the State, and even within the great valley. In 1909, for example, the rainfall at Eureka, Humboldt County, on the immediate coast, was 51.64 inches, and at San Diego but 14.4 inches. At Monumental, Del Norte County, adjoining Humboldt (further north), the rainfall reached 153.54 inches. At Redding, Shasta County (interior), the rainfall was 56.38 inches; at Red Bluff, forty miles south, 34.99 inches; at Sacramento, 24.87 inches; Fresno (center of San Joaquin Valley), 16.47 inches; Bakersfield (extreme southern point of valley), 9.29 inches. In the Sierra Nevada Mountains the rainfall increases about one inch for every hundred feet elevation. It will be observed that the rainfall south of the Tehachapi Mountains (Southern California) is greater than in the extreme southern portion of the San Joaquin Valley.

The direction of the Coast valleys exerts striking influence upon rainfall and temperature, dependent upon the facility for the trade winds to reach them. The climatic and agricultural character of the foothills, up to 2,000 or 2,500 feet, is much the same as in the valley, although the character of the soil is different. Even higher, fine deciduous fruits are grown. Still higher are the lumbering and mining camps, and thousands of cattle and sheep are herded in summer, where in winter the mountains are deeply covered with snow. Illustrative of the characteristic variations of climate, it may be stated that in the vicinity of Summit, Placer County, elevation 7,017 feet, the temperature was 2 degrees above zero, and the snowfall for the year was 52.0 inches. At Rocklin, Placer County, thirty miles west, elevation 249 feet, the lowest temperature was 25 degrees above zero. All the natural ice consumed in California was made near Summit, while oranges were being gathered for market around Rocklin.

Temperature. I have prepared the following table from the "Annual Summary, California Section, of the Weather Bureau," for 1909. It shows not only temperature, but also rainfall, elevation of points above the sea, clear and cloudy days. I have taken illustrative points in Northern and Central California, the Coast country and the mountains. It will be noted that while the annual mean temperature of the Pacific Coast does not suffer greatly from the annual mean of the Atlantic Coast, the average summer and average winter here and on the Atlantic are wide apart, and the extremes between the highest and lowest temperature are very great. It is this exemption from extremes of temperature that constitutes the charm, and healthfulness as well, of the Pacific Coast.

In the interior, especially in the great valley, the seasons show greater extremes of temperature, but, as already suggested, the dryness of the air renders these extremes less felt than on the Coast, where the air is more moist. The limit of winter cold is the test of what may be grown rather than the average temperature.

And so we find citrus fruit flourishing from the north to the south end of the great valley, and orange growing is a leading industry in several counties of that valley. In Southern California both the heat and the cold are comparatively milder, although the readings of the thermometer do not much differ from the

points north of the Tehachapi. It is shown by the table that there were 213 clear days in San Jose as against 150 in Los Angeles during the year, although there were nearly twice as many rainy days in San Jose. Abundant sunshine is also found in the interior. For example, Sacramento, in the north, had 215 clear days, and Riverside, in the south, 228. In truth, the California of "sunshine, fruit and flowers" is pretty nearly the whole State, below high mountain elevations.

Climate Unchanging. As far back as we have any recorded history, and behind this, embracing traditions coming through the early Mission fathers, we learn of the same equability of temperature, the same balmy atmosphere, the same luxuriance of vegetation. Our soil may require renewing by fertilization, but our climate is as constant as the sun. The conditions which have produced the result are themselves unchanging, and so must be the result.

It Is Health-Giving. California is a universal sanitarium. The climate of the Coast is invigorating, stimulating and delightful, neither hot nor cold; the laborer knows no fatigue except from physical exhaustion resulting from over-taxed muscles. The brain-worker yields only to failure of mental powers. In the interior valleys, in midsummer, the temperature is higher, and there is discomfort at times while working in the harvest fields and at the desk and behind the counter. But the dryness of the air robs the thermometer of much of its terror. The sensible temperature, i. e., the temperature we in fact experience or feel in the valleys, is less irksome at 100 or 110 degrees than in regions of greater humidity of the atmosphere where the reading is from 85 to 95 degrees. Sunstroke here is unknown. It is the common experience of persons coming into almost any part of the State that they increase in weight and strength, are less troubled with nervous affections, sleep and eat well, and improve in health if ailing from any cause.

Source of Happiness. The variety of temperature and climatic conditions existing in the mountains, valleys, and on the Coast, and the celerity and ease with which our inhabitants may change their immediate surroundings, constitute one of the great charms of California life. Thousands of families residing



A NEW YEAR'S SURF-BATHING PARTY IN PACIFIC OCEAN, NEAR CLIFF HOUSE, SAN FRANCISCO.

CLIMATOLOGICAL DATA FOR 1909.

Stations.	Counties.	Elevation, feet.	Temperature Degrees Fahrenheit.			Precipitation, inches.		Rainy Days.	Sky.			Part of Country.
			Annual Mean.	High est.	Low est.	Total for year, inches.	Total Snowfall inches.		Clear Days.	Partly Cloudy Days.	Cloudy Days.	
Hornbrook	Shastiyu	2,154	51.0	102	15	24.26	35.0	48	244	21	101	Mountain and High Plateau.
Alturas	Modoc	4,460	46.7	100	-21	14.61	47.5	104	171	11.4	80	"
Dunsmuir	Sierrayu	2,285	53.7	101	19	79.40	150.5	106	233	3	129	"
Quincy	Plumas	3,400	47.9	94	8	68.87	126.2	105	216	48	101	"
Stanislaus	Placer	7,017	43.9	89	2	68.87	520.0	105	214	44	107	"
Yamack	Alpine	8,000	38.6	88	-24	72.08	673.0	99	190	33	142	"
Yosemite	Mariposa	3,945	38.6	99	9	67.30	201.0	99	190	33	142	"
Keeler	Inyo	3,920	...	...	...	...	...	...	...	...	...	"
Redding	Shasta	3,827	62.2	103	26	66.38	37.0	95	225	49	91	"
Red Bluff	Shasta	3,827	62.1	106	26	34.39	*18.0	85	222	48	86	"
Oroville	Glenn	2,874	62.4	107	29	24.09	6.0	77	218	67	80	"
Colusa	Colusa	60	60.4	103	29	18.31	0	61	215	66	85	"
Sacramento	Sacramento	71	59.7	101	29	24.87	0	89	216	66	86	"
Stockton	San Joaquin	33	60.2	102	26	20.82	0	60	241	66	86	"
Merced	Merced	118	60.2	105	31	16.30	0	60	260	3	102	"
Fresno	Fresno	283	62.8	107	30	16.47	0	60	233	47	85	"
Bakersfield	Kern	404	68.0	108	30	9.29	0	35	305	18	42	"
Friso	Glenn	624	62.2	106	28	22.76	6.0	53	270	1	94	"
Oroville	Butte	2,580	62.1	110	28	41.48	4.0	74	191	37	127	"
Nevada City	Nevada	2,580	53.8	98	14	76.65	59.0	112	201	30	138	"
Rocklin	Placer	249	60.6	98	25	37.55	0	71	254	29	82	"
Placerville	El Dorado	1,875	54.6	99	23	58.28	12.0	88	220	33	112	"
Jameson Cove	Tuolumne	1,471	57.6	100	25	45.64	2.0	73	248	50	67	"
Readley	Tulare	600	61.0	108	20	18.43	0	44	234	24	73	"
Caliente	Fresno	347	62.3	107	27	19.66	0	44	273	23	69	"
Butte	Humboldt	1,280	64	...	...	...	...	...	...	...	...	"
Point Reyes	Marin	490	51.0	77	36	51.64	...	129	96	125	144	Sea Coast.
Farallone Islands	San Francisco	80	51.9	81	33	20.38	0	104	126	95	155	"
San Francisco	San Francisco	207	55.2	81	34	31.36	0	94	158	100	144	"
Monterey	Monterey	15	56.2	80	36	22.36	0	80	158	78	107	"
San Diego	San Diego	130	60.0	80	35	14.34	0	61	230	94	61	"
San Barbara	San Diego	130	60.0	100	35	14.34	0	42	199	94	74	"
Los Angeles	Los Angeles	283	62.0	103	25	23.82	0	60	160	139	46	Southern California.
Riverside	Riverside	881	61.4	107	37	18.06	0	61	228	89	78	"
Escondido	San Diego	1,460	61.4	106	35	46.30	0	60	230	38	97	"
Elsinore	Riverside	1,234	61.3	108	33	28.41	0	60	263	91	246	"
Redlands	San Bernardino	1,352	61.8	105	19	21.13	0	40	263	38	78	"
Calistoga	Napa	1,863	56.9	106	25	17.38	0	64	201	76	105	"
Santa Rosa	Sonoma	861	54.3	93	22	46.40	0	101	203	60	125	West of Coast Range.
Mt. Tamalpais	Marin	2,376	51.1	84	22	43.06	76.0	103	208	63	102	"
Lick Observatory	Santa Clara	4,209	51.1	84	22	23.49	0	64	213	65	106	"
San Jose	San Benito	95	56.7	100	26	23.39	0	89	229	65	97	"
Hollister	Santa Clara	254	56.5	103	21	51.77	0	69	229	85	67	"
Los Gatos	San Luis Obispo	600	60.7	106	31	29.58	0	77	238	23	104	"
Ojai Valley	Ventura	900	70.4	108	15	39.12	0	51	282	28	65	"
Palm Springs	Riverside	534	70.4	113	32	5.50	0	49	236	85	44	"
Calistoga	Imperial	0	71.1	112	26	3.94	0	23	282	23	60	Southeastern California.
Mecca	Riverside	-185	71.1	112	21	4.01	0	16	313	27	25	"

* Very abnormal. Most frequently the snowfall, if any, is an unmeasurable quantity.

in the valleys find their way into the mountains or to the seacoast and have most delightful camping-out experiences; and this they do in a few hours or a day or two at most, with their own conveyances. Our valleys and mountains lie so related to each other that no spot can be found devoid of scenic beauty. There is no dull monotony in the farmer's life as there is from necessity in the lives of those who reside on the great plains regions of the West, few of whom are ever permitted to enjoy the inspiring and elevating means of recreation and rest from labor which are a part of our life here.

Some Peculiarities. Degrees of latitude cut little figure in determining the readings of the thermometer, which is not at all true on the Atlantic Coast and in the West. The foregoing table tells the story from official sources for 1909 and is valuable as covering the whole distance and intermediate points, from San Diego, near the south line of the State, to Hornbrook, Siskiyou County, near the Oregon line, nearly ten degrees of latitude apart.

The fact that latitude has little to do with our climate is a remarkable feature. It is not true of Italy, for there is a great variation there between the temperature north and south. It is not true of France or elsewhere along the west coast of Europe. We believe this to be a peculiarity unique and found only on this Coast. This peculiarity is further attested by the fact that in nearly the whole length of this vast region the same fruits are grown. Within a radius of fifty miles around Oroville, which is 150 miles north of San Francisco, and 650 miles north of Los Angeles, there were nearly one thousand (1,000) carloads of oranges raised last year and shipped out of the State, and they ripen earlier than in the south. Elevation has much more to do with temperature than latitude, for in high altitudes we find snow. Our mountain summer climate is extremely delightful and is destined to draw many Eastern people to the numerous charming retreats in the Sierra Nevada and the Coast Range.

Economic Value. But, after all is said, it must be conceded that climate is our greatest resource because of its high economic value, as it is also our most valuable asset. The unthinking speak of climate as an attraction rather than a resource, but it is a resource because by its influence we are enabled to so marvelously diversify and increase the number of our agricultural products, and often, too, all these products may be grown on the same body of land. It is a resource, because man's labor here can be profitably employed every day in the year, because there is no month when vegetation in some form is not growing, and because it furnishes ideal conditions for the growth of irrigated crops. There is no time in California when all nature is at rest or plant life is sleeping. In the field, orchard, garden, factory, and in the mines; on the stock-farm and in the dairy, every day is a day of productive labor. We commence shipping fresh deciduous fruits in May and there is no cessation until December. In November we begin to ship citrus fruits, and they overlap the deciduous fruits and continue, in fact, the year through.

Professor E. W. Hilgard justly sums up the matter thus: "Taken as a whole, California corresponds in its climatic features and adaptation to the Mediterranean region of Europe and Africa—a grand Riviera, with a partial background of the desert as well, where the date palm and the ostrich find a congenial home, and alluvial plains equaling in richness the famed delta of the Nile."

IRRIGATED AGRICULTURE—THE DOMINANT INDUSTRY OF CALIFORNIA.

By Samuel Fortier.

California has always been considered a State of great possibilities. Her mines and her commerce and her climate and agriculture have long been the theme of inspiring pen-pictures. With a range of climate and soil and of mountain and valley more varied than that possessed by any of her sister States, with a geographical position and commercial facilities naturally favorable to intensive development, she has ranked as the leader in the upbuilding of western America. But while her gold and her seaports and her forests and commerce have made her position unique among the States, her future has always been considered bound up in her agriculture. Over half a century of development has shown that if this agriculture is to be the best of which the State is capable, it must be founded on irrigation, and for years the careful husbandman has, over a large portion of the State at least, made the artificial application of water to land an important part of his industry. Hence it is that any treatment of irrigation in California must consider not only what has been accomplished, but what seems possible of accomplishment in the future.

The total land area of California is approximately one hundred million acres. According to data secured by Mr. F. W. Roeding of the Office of Irrigation Investigations of the U. S. Department of Agriculture, about 2,500,000 acres was actually irrigated in 1909. This statement, however, does not convey a true idea of the relative importance of irrigation to agriculture in California. Professors Hilgard and Loughridge of the University of California estimate that only fourteen million acres, or about one-seventh of the total area, is valley agricultural land, so that the two and one-half million acres irrigated comprise more than one-sixth of the irrigable land of the State. This estimate does not include the tillable upper mesas and mountain valleys, both of which contain large areas of irrigable land. Yet this is not the whole truth. In 1902 about one-fifth of all the irrigated land in the United States was in California, and this State ranked first in the total number of irrigated farms and in the total construction cost of systems. The highest priced irrigated land in America is found in California, and in no other State has water for irrigation reached so high a value, or been as carefully and as economically used. And in no other State is there so great an area of fertile farming land for which the available supply is so large.

Irrigation, like any other development, has followed the lines of most evident financial returns. Hence the localities of least annual and summer rainfall were the first to be reclaimed by the artificial use of water. The tide of irrigation, however, has been moving steadily northward, and, excepting in the mountainous sections and the sections of excessive rainfall, the necessity for irrigation, or at least the value of it where it is not a complete necessity, is almost universally recognized. While heretofore, then, irrigation has followed the line of most evident return, in the future it will follow the available water supply.

The water supply of the State is in its streams and wells. The wells now dug and in use are chiefly in Southern California and in the lower San Joaquin and the Santa Clara Valleys. Only the larger streams of the State have been measured, and without reliable data it is impossible to estimate the flow in the hundreds of smaller streams.

The supply in the larger streams as measured by the United States Geological Survey is given in the following table. These figures give in round numbers the average annual flow in acre-feet for the past four to six years.

TOTAL MEAN ANNUAL FLOW OF CALIFORNIA STREAMS IN ACRE-FEET.

Name of Stream.	Station.	Acre-Feet.
San Joaquin River.....	Herndon	2,750,000
Tuolumne River	La Grange	2,350,000
Kings River	Sanger	2,000,000
Stanislaus River	Knight's Ferry	1,500,000
Merced River	Merced Falls	1,200,000
Kern River	Bakersfield	700,000

Kaweah River	Three Rivers	400,000
Tule River	Porterville	250,000
Salinas River	Salinas	200,000
American River	Fair Oaks (near)	4,130,000
Yuba River	Smartsville (near)	3,670,000
Feather River	Oroville	5,950,000
Cache Creek	Yolo	650,000
Stoney Creek	Fruto (near)	540,000
Sacramento	Red Bluff (near)	12,420,000
Southern California Streams		200,000
Colorado River at Yuma (one-half flow)		6,250,000
Total		45,160,000

Leaving out of consideration the water supply available in the creeks and smaller rivers, 45,000,000 acre-feet of water is sufficient to cover the 14,000,000 acres of agricultural land in California to a depth of over 38 inches, which is ample for the growth of all crops. This vast quantity of water can never be entirely utilized in irrigation, because it cannot be fully controlled, but the statement of it shows the tremendous potentialities of California irrigated agriculture.

What California is now accomplishing by irrigation can partly be told by using as a basis the irrigation census of 1902. According to this census, 1,708,720 acres were irrigated in 1902, which was an increase of 18.2 per cent over the area irrigated in 1899. From 1902 to 1909 the increase has been more rapid and about 2,500,000 acres are being watered at this time.

Using the figures that were true up to 1902 as a basis, the total cost of the irrigation systems has been over \$27,000,000, or over \$13.50 per acre. The significance of this last figure is apparent when it is remembered that it is nearly one-half the total value of land and buildings invested in manufactures in California in 1900.

From the returns made by assessors and the shipments of products out of the State it is possible to form an approximate estimate of the value of a part of the irrigated product. Of the 300,000 acres in vines and an equal area in orchards, the annual gross returns to the growers would not vary far from \$150 per acre, or \$90,000,000 in all. Then, in addition, there is alfalfa, vegetables, small fruits and other crops, the greater part of which are irrigated. The gross returns from these would increase the annual value to the extent of \$45,000,000.

It has already been stated that irrigation was first resorted to in California in those sections where a profit from irrigation was first most evident. These sections have, of course, been where the rainfall is least. In that portion of the State south of Tehachapi, commonly known as Southern California, the development of irrigation was rapid, continuing with bounds until the water supply available in the streams was practically exhausted. Since then the irrigated area has been extended only by resort to pumping from wells and by endeavoring to make the water already diverted irrigate two acres where it irrigated only one acre before. The total area under ditches in various parts of the State in 1909 were as follows: Southern California, 850,000 acres; the Coast Country, 85,000 acres; San Joaquin Valley, 2,150,000 acres; Sacramento Valley, 630,000 acres; other parts of State, 160,500 acres; total, 3,875,000, of which about two-thirds was actually irrigated in 1909. Outside of Southern California, the principal areas irrigated from wells and springs were located in the lower San Joaquin and in Santa Clara Valley.

The foregoing is a brief statement of what has been accomplished by private enterprise during less than half a century in reclaiming a portion of the irrigable lands in California. The attention of the reader has likewise been called to the natural resources in both land and water which remain undeveloped, awaiting the concerted action of industrious farmers. Notwithstanding the magnitude of this task, we believe that it can be accomplished. The same intelligence, energy and perseverance which wrested 2,500,000 acres from barren sands and low-producing grain fields can reclaim other millions of acres.

Of late years large sums of money have been expended on both the northern and southern borders of California by the United States Reclamation Service in the

construction of irrigation works. When these are completed and settled they will materially increase the revenues obtained from irrigated farms and orchards. Over 55,000 acres of the Klamath Project lies in Modoc and Siskiyou counties, California. This land, although over 4,000 feet above sea-level is well adapted to the growth of alfalfa, red clover, grains and vegetables. On the southern boundary of the State, over 16,000 acres of the Yuma Project are in Imperial County, California. These, with about 14,000 acres included in the Orland Project, make a total of 85,000 acres that will be irrigated when these projects are completed.

What is most needed in this State and what we should most highly prize is an influx of industrious settlers, each possessing sufficient means to enable him to make a fair start along the line of irrigated agriculture. The opportunities open to this class are exceptionally good. All of the natural advantages essential to the success of the irrigated farm are to be found in the great central valley of California—fertile soil, good climate and an abundant water supply. Yet these natural gifts count for little when unutilized. We need the intelligent brain and the trained hand of thousands of farmers to make the best possible use of these advantages. In much of this work no large amount of capital is required. The individual, mutual company and irrigation district can reclaim an additional 2,000,000 acres in a manner similar to the successful efforts of like agencies in the past. In this connection it may be a surprise to some to learn that there are about 1,375,000 acres of rich valley land now under ditch, which is not irrigated on account of the lack of settlers. Much of this land is for sale at reasonable prices. The water supply for a much larger area is readily accessible, and both land and water can be united under the most favorable circumstances whenever a sufficient number of citizens join to bring it about.

This dominant industry of California is in no danger of languishing for a few years to come on account of the lack of irrigation canals and storage reservoirs. The State is now filling up at the rate of about 100,000 people a year, and there is sufficient unirrigated land under canal systems to provide for this influx of settlers for the next ten years. The settlers should understand, however, that there are difficulties in the way of irrigation in California, as there are wherever irrigation is practiced. A brief review of some of these may not be out of place.

It has been stated that nearly 1,375,000 acres of fertile valley land are now under ditches, but unirrigated. Much of this land has been cultivated for years, but it does not necessarily follow that it is ready to receive water. It may cost on an average of \$15 per acre to construct permanent farm ditches and to prepare the surface for irrigation. The exact cost of this depends upon the method of irrigation to be followed and the degree of refinement practiced in the preparation of the ground. Definite statistics and figures regarding this are available in numerous publications, but notably in Bulletin 145 of the Office of Experiment Stations of the United States Department of Agriculture. This bulletin tells not only the experience of irrigators in California, but of irrigators throughout the West. If the task of preparing land is attempted by settlers from the humid states without their first making every effort to avail themselves of the experience of older irrigators, partial failure, at least, will be very apt to result. And, in addition to the perplexities of preparing land for irrigation, others equally trying are quite sure to be encountered in applying water to land. Most beginners use too much water. The evils of this, including the waste of valuable water and injury to crops and soil, are apt to be considerable, and every effort should be made to see that they are avoided. Requirements and practice vary with localities, but in every locality there are some careful irrigators whose advice, well mixed with common sense, will help to guide the newcomer along a safe path.

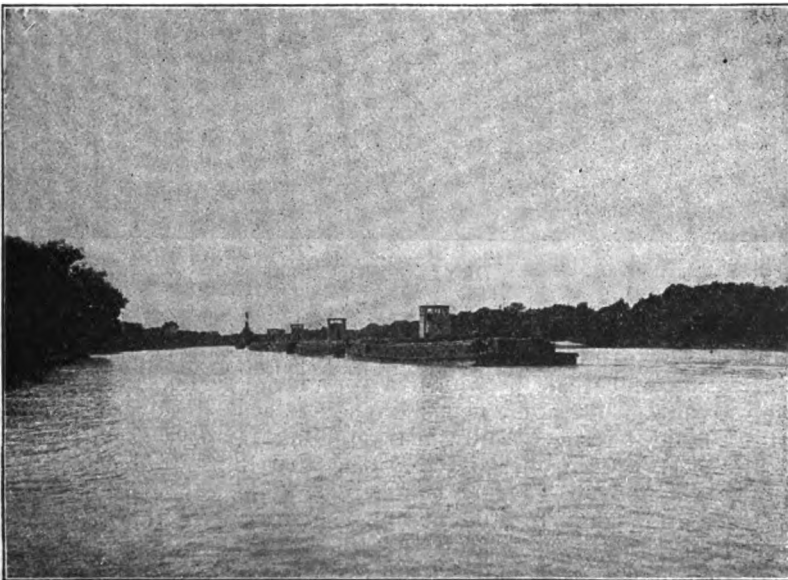
Besides the practical difficulty of preparing land and applying water, the irrigator in California must give careful attention to problems of the rightful ownership and equitable distribution of water. Nature usually provides an abundant quantity of snow on the elevated ranges to supply the soil of the valleys with the requisite amount of moisture, provided that it is properly husbanded or made available for use at the proper time by storage; but the State, unfortunately, has failed

to make adequate provision for determining the rights of claimants to water, or for distributing to each his equitable portion. As conditions now exist, some receive too much, while others receive too little. It is to be hoped that before long the State will do as much toward protecting the rights of irrigators as some of the other Western States have done. In the meantime, with their characteristic determination to do things in spite of difficulties, Californians are making the best they can of the opportunities that are afforded. With more Californians, these difficulties will grow less, because with an increase in population and a higher development of irrigated agriculture there is bound to result on the part of the State at large a better understanding of the needs of peaceful and successful growth.

AGRICULTURE IN CALIFORNIA.

By Arthur R. Briggs.

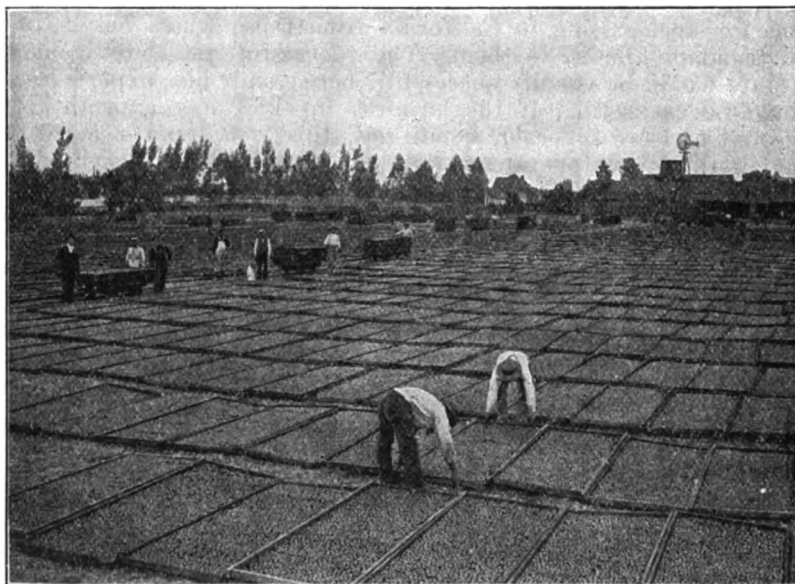
Under varied conditions, farming in California has more features of interest and presents greater opportunities than in any other state. The wide range of products and the peculiarities of soil, climate and weather afford abundant scope for the energies and experiments of the wideawake tiller of the soil. Despite the impression that prevails in states east of the Rocky Mountains, the rules under which farming is profitable elsewhere are applicable here. The stock-raiser in any other part of the United States would not be at a loss to understand the features of difference in stock-raising in California from those which obtain in the older states, and to adapt himself to them. The successful and intelligent farmer in any other state would be equally successful here, and his experience wherever gained would be as useful. If the business involves less expenditure and less care on account of more favorable conditions, this would not necessitate the unlearning of anything, nor operate against the introduction of methods that have been successfully employed in other states. This statement applies to all branches of agriculture, for the reason that farming, like any other occupation, involves a fundamental knowledge, fortified with practical experience, and the intelligence to understand the importance of adapting that knowledge and experience to different conditions.



GRAIN BARGES ON THE SACRAMENTO RIVER.

When it is understood that California, the second state in size in the Union, has a total land area of 155,980 square miles, or 99,827,200 acres, of which 28.9 per cent, or 28,828,931 acres, were included in farms when the census of 1900 was taken, some general idea of its magnitude as a farming area is received. But no part of California has yet been developed to its capacity, either as to products or in the selection of such as are ultimately to be of the greatest profit. Intensive farming has been exemplified in several counties, but not one of them has its whole cultivable area in crops. Another consideration in estimating the agricultural possibilities of California is that the soil and climate are favorable for the growth of all the products—that is, valuable and high-priced crops—which made the region around the Mediterranean unique and gave it an exclusive trade, until California intervened; also, that here in the same localities and in adjoining tracts, the raisin, the fig, corn and other cereals, and all the vegetation and fruitage common to the strictly temperate zone, thrive to perfection.

That the extensive grainfields of former years have been or are being converted into farms of less acreage devoted to a new cultivation, and that the combined harvester, which cuts, threshes and sacks the grain ready for market, with its thirty-two mules as a propelling power, is gradually being supplanted with the machinery suited to smaller holdings, are evidences of a new and more modern civilization which is in the line of industrial progress. But this does not remove California from the list of large cereal production.



DRYING FRUIT.

Agriculture in California, it should be understood, has passed through several phases. Immediately after the subsidence of the characteristic era of placer mining, the cultivation of cereals began on a very large scale. Fruit was considered to be only of advantage for home needs. When it was discovered that green deciduous fruits could be successfully marketed as far eastward as the Atlantic Coast, and ultimately in Europe, and that the distribution of canned and dried fruits might be effected on a larger commercial scale, other branches of farming began to attract attention. Intelligent experiments led to the discovery of many fruit varieties that could be successfully grown and marketed.

The limit of products that may be grown in California is co-extensive with the range of products in all semi-tropical and strictly temperate lands. Means have been discovered to pollinate the fig, so that in California the Smyrna fig is suc-

cessfully produced, and promises to supply the world. That this is no idle dream is shown in the fact that already California raisin-producers, after but few years' experience, practically have the whole United States as a customer. The prunes of California have driven French prunes largely from the American market, and are pressing the foreign market for a leading position. California dried and canned fruits have secured the trade of the United States and have for several years been extensively exported to Europe and to other parts of the world.

No agricultural experiment that has ever been tried in California has been a failure from the viewpoint of production. It is accepted as a fact that "everything will grow in California." The great variety of elevation and of climate provide all conditions essential to plant growth. The most forbidding deserts bloom like the rose at the magic touch of water. Plenty waits only industry, intelligently applied, to give large rewards in all parts of the State, with the exception of the higher altitudes in the mountains. The foothills and the valleys, the interior and the coast counties alike, are prolific in agricultural products. In the northern and central counties of the State crops have been annually produced at commercial profit without artificial irrigation; but it has been demonstrated that artificial irrigation not only increases the yield greatly, but is an assurance of success. Wherever there are well-established irrigation systems, fruit crops are certain and large. The southern counties of California have from the beginning been compelled to rely upon artificial irrigation, the rainfall south of the Tehachapi Pass being less than in the counties farther north. The northern and central counties have also of late years created large and successful irrigation systems.

The beet-sugar industry is capable of large increase. Experience and scientific experiments, as well as climatic conditions, attest the superior merits of California for sugar-beet growing.

The opportunities for development of tobacco-growing are recognized. The peculiar quality of soils in California renders fertilizing unnecessary for the tobacco plant, which is a material saving as compared with other states. The absence of frost during the growing season is a feature of importance in the cultivation of tobacco. Parties most familiar with tobacco-growing contend that it will ultimately be largely engaged in and be profitable here.

Livestock-raising is very largely and successfully engaged in. The foothill and mountain districts, at one time erroneously considered among waste lands, furnish rich pasturage—the higher mountain elevations in summer, and the foothills in winter—thus giving favorable conditions the year around. Animals in this State mature and reach their growth at an early age. A two-year-old animal attains about the size of a three-year-old in other states. A large area of alfalfa during the last few years has added greatly to the livestock interests.

The breeding of horses and mules has been a prominent factor in agricultural development. California thoroughbred horses have stood in the front rank for many years.

In the earlier development of California sheep-raising was a leading industry. In 1876 sheep numbered nearly 7,000,000 and the annual production of wool reached over 56,500,000 pounds, bringing over \$10,000,000 to the State. Other agricultural pursuits became more profitable, besides the demands of increased population displaced sheep husbandry, and after 1876, sheep-raising declined in importance. It is, however, still a large industry, both for mutton and for wool, and will continue to be, as the ranges unsuitable for cultivation in the foothills and mountains are well suited to this industry. The present product of wool for the State aggregates about 22,000,000 pounds.

Hogs are extensively raised, but not in sufficient numbers to supply home needs. With the increased acreage in alfalfa and the extension of the dairy interests this branch of farming is on the increase. Indian corn, the great product of the Middle West for fattening hogs, is lacking in the State, and its substitute is barley, which is found to be equally well suited to that purpose. This branch of farming is capable of large increase. On account of the quick returns and the sure profit it affords, hog-raising is attracting much attention.

Despite the fact that every possible condition favorable to the poultry business exists, large quantities of eggs and poultry are imported annually. It may surprise the farmers in the East and West when the fact is known that some farmers in California send to the town store for butter, eggs and chickens. Eggs and chickens are generally the by-product of the Western farm, but they go a long way toward the support of the family. The California farmer has yet to learn the value of the farm oy-product.

The production of honey is worthy of consideration. In the central and southern portions of the State, and to some extent in Northern California, the business is made a separate occupation; the output is large and finds market in the East and West. As a by-product of the orchard and farm, bee culture has value. In orchards it has been found that bees aid in the pollenization of the fruit-tree blossom.

It will, therefore, be seen that agriculture in California covers a wide range and affords opportunity for important development. The last quarter of a century has given demonstration sufficient to justify expectation far beyond any present development. The application of scientific methods is bringing into this department of industry intelligence and capital from various parts of the world that promises great results. This, coupled with peculiar climatic conditions, gives to farm life and the country home, features of attraction hitherto unknown.

Most of California's oranges are grown in the southern and lower central parts of the State; practically all the fresh deciduous fruit was shipped from Northern and Central California. The raisin center is in Fresno County and vicinity; the prune center is in Santa Clara County and vicinity; of the dried fruit over eighty-five per cent goes from the northern and central portions of the State, and these sections give an exceedingly large percentage of the canned fruits; the walnuts are principally grown in the south, while the almonds are mostly from the north; the fresh peaches, pears, cherries, plums, apricots, etc., nearly all go from north of the Tehachapi Mountains, which divide Southern California from Central and Northern California. The annual production of wine is now about 30,000,000 gallons.

EDUCATIONAL FACILITIES IN CALIFORNIA.

By Robert Furlong.

Whatever advantages in soil, climate or products a country may possess, the social conditions must also be attractive to make the place desirable for family residence.

California has been endowed by nature with a fertile soil, with a climate unsurpassed, and with rich and varied products that are yielded in abundance. Her citizens, emulating nature's example, have in like liberal spirit established those agencies that contribute to man's social enjoyment.

Schools, churches, libraries, fraternal and other civic organizations are general throughout the State. None of these agencies for good society are wholly lacking, and, except in sparsely settled mountain regions, all are accessible to every resident. Nor are these institutions of the primitive type, but are modern and, as a rule, housed in well-apportioned buildings.

Of the several social factors named, none is closer to the hearts of the people than the school. In the country the schoolhouse is the central place of interest, and the school the bond that unites many families into one district community. In the city it is valued as an important agency in the training of youth, and considered necessary for good citizenship.

Few, if any, other States or countries have made such liberal provision for a general system of public education as has California. The founders of the State over fifty years ago inserted in its Constitution a section providing for the education of youth. This soon after led to the enactment of school laws, to the establishment of schools and to the building up of a State school system. California's educational system is a growth, the growth of half a century of careful cultivation.

Modeled originally from some of the best systems then in use in older states, it has since been many times modified to meet the needs of a rapidly developing population. In its present advanced form it is recognized by many educators as being the most nearly perfect system of public education in America. Its standards are high, its scope is broad and comprehensive, covering the whole field of school and college education.

To the intending immigrant a knowledge of the educational facilities the State has to offer to its residents is particularly desirable, for it is generally acknowledged that where school facilities are lacking few, if any, parents will care to rear their children, even when other conditions are favorable. On the other hand, a good school nearby often determines the location of the future family home. It can here be truthfully stated that there is no community in California without a school. Elementary schools instructing in all the essentials of an English education are general. The law requires the establishment of such schools and provides for their maintenance.

The conditions under which a new school district may be organized are readily complied with where convenience or necessity indicates a change should be made. By the subdivision of a large district a new community may secure a school where one has not previously been conducted. In this way school districts have been multiplied throughout the State. Many of these have a single-department rural school. When school attendance becomes sufficiently large, several teachers are employed and the pupils are classified into primary and grammar departments. Rural schools of this character are numerous in the fruit sections where the population is dense. Such schools have all the advantages of well-equipped city schools. Towns and villages have graded schools of several departments similar to the graded rural schools described.

Every city is a school district of itself and has a Board of Education and a City Superintendent to direct the work. Each city has its own course of study. Because of the large teaching force, close grading can be secured in a city department. This permits of a course of study somewhat more elaborate than that prescribed in the County Manual for schools outside city limits. Special supervisors for such studies as drawing, vocal music, manual training and physical education are often employed in city schools to aid the regular class teachers. A teacher in a city department seldom has more than one grade of pupils, whereas a teacher in a rural school usually has several grades.

It does not follow, however, that good work cannot be done in a school of mixed grades. Many of the brightest students in the high schools and in the college courses have come from country schools having a single teacher. It should be borne in mind that this district school with one teacher, so common in the rural sections of California, is an important factor in the State's educational system. It is of a much higher class than the rural schools of many of the older states.

The instruction in the California country district is intended to cover the whole field of elementary education. The pupils of such schools are classified and graded the same as are pupils of town and village schools. A county course of study is the same for all schools, except those in cities. Such a course is followed with nearly as much precision in a single-department country school as in any other class.

The legal qualifications of teachers are alike for like grades of certificates, the requirements being the same for country and city. Perhaps in no other State or country must teachers in rural schools hold certificates as high as are held by their fellow workers in the city department. These observations are made here to show that a country residence in California does not to any appreciable extent deprive families of the best school privileges. The State aims to educate all of its children, giving to all like privileges, so far as conditions will permit. To this end, through State and county support, appropriations amounting to over ten millions of dollars per year are expended on the public schools. This serves to maintain the

schools during eight to ten months in the year. All cities, towns and many country districts have their schools in session ten months each year.

The elementary schools described in the foregoing are objects of special favor by the State, as the State school fund is used exclusively in the payment of their teachers. It is in them that the great mass of the children of California receive their early education. As previously stated, the course is broad and full, including all branches below the high school.

The teachers employed are well qualified for their work, many of them coming to it from professional training schools. But these elementary schools present only one feature of California's educational system. Secondary or high schools form another and a higher class, presenting a different phase of educational activity.

These secondary schools have academic courses that prepare pupils for college entrance. Many of them have additional courses that are elective and do not contemplate later university work. Admission to the secondary schools is to pupils who have finished the elementary course. There are three classes of these schools in the State, known as "city high schools," "county high schools" and "union district high schools." All have much the same plan and purpose, differing only in details of administration and support. Revenue for the maintenance of these high schools comes in part from the State through direct appropriation, but is chiefly levied upon the locality maintaining the school.

Union district high schools are multiplying rapidly throughout the State. They are formed, as the name indicates, by a union of several districts that jointly furnish students and support for one central high school. All taxable property within the area of a union district shares equally in the expense. This class of high school is very popular in the rural sections, as it brings within the reach of country homes a school that gives all necessary preparations for college. There are now few counties in the State that have not one or several schools of this class. They have in general good, substantial buildings, costing variously from fifteen thousand to a hundred thousand dollars each. City high schools are increasing in number also.

The teachers employed in all high schools must have attainments of a high order. Seldom any are legally qualified who have not a college degree from some university of good standing.

There are also a number of private academies, military schools, convents and other private institutions of learning of recognized merit, in different parts of the State, that fit pupils for college. These, as a rule, charge tuition. Families preferring private education for their children have little difficulty in finding select schools of the kind desired, whether secular or sectarian. Many of the church denominations have colleges and seminaries, as well as schools of lower grades, in which religious instruction is part of the course. There is an extensive system of parochial schools throughout the State, limited mainly to the cities and larger towns.

The higher education is represented in California chiefly by two great universities that are classed among the leading institutions in America. These are the University of California at Berkeley, Alameda County, and the Leland Stanford, Jr., University at Palo Alto, in Santa Clara County. They are less than fifty miles apart, centrally located and easily reached from all parts of the State.

The first-named is part of the State's public educational system. Maintained at public expense, its doors are open free to all students of either sex who hold proper credentials for admission to its colleges. In the number of its students, the wide range of its college courses and the general facilities that this institution presents for students' work, "Berkeley" takes high rank among great universities. Branch colleges for vocational study and for scientific research, belonging to the university, are located in different parts of the State. Of these a group of colleges is in San Francisco, in which law, medicine, dentistry, pharmacy, veterinary surgery are pursued as professional studies. Tuition is charged in some of these professional courses. The Lick Observatory, perhaps the best-known as-

tronomical station in the world, is a part of the University of California, on Mount Hamilton, near San Jose. Experiment stations for scientific research are also under the direction of the State institution at Berkeley, but are located elsewhere.

No less known or noted is "Stanford," as is popularly called the most richly endowed university in the world at Palo Alto. Its history and that of its illustrious founders is so well known as not to need review here. It is not due to its liberal endowment, however, that this grand university has become known to the educational world. Its plan and purpose, as designed by its founders, its policy as a university, combined with the strength of faculty, gave it high rank from the beginning, which position it has since successfully maintained.

Both of these grand institutions for the higher education are open, practically without tuition, to the youth of California. No State in the Union can offer better than this—few, if any, as good.

There are a number of other institutions for the higher education, of lesser rank than the two named, that confer degrees. They are colleges of good standing, mostly under the control of some religious sect and, as a rule, supported by tuition fees.

It will be seen that facilities for the higher or college education are not behind those of older States. In some particulars they are better, which fact induces many students to cross the continent for the purpose of study at the California universities.

Besides a State Polytechnic School, located at San Luis Obispo, there are schools of mechanical arts, of mechanical trades and of industrial or manual training.

There are five normal schools conducted by the State for the professional training of teachers. These are so located in different parts of the State that some one of the schools is easily reached by students from any residence section. From these State normal schools chiefly come the great army of teachers employed in the grammar and primary schools of the State. The professional standard is high for teachers even in the lowest grades. Superintendents of Schools, Supervisors, Inspectors, Boards of Education for cities and for counties, together with a State Superintendent of Public Instruction, direct the work of education in the public school system.

Upon the whole, it will be seen from the foregoing that education in California occupies a prominent place, that it is general throughout the State, that it is free to every resident, even in its highest institutions. From the kindergarten through the various elementary and high school grades to the college, inclusive, education is without direct cost to the youth of the State. Families desirous of making homes in California will find here every facility for the education of their children.

The following is from Circular No. 5 issued by Edward Hyatt, State Superintendent of Public Instruction:

Number of Teachers. There are about 8,000 primary and grammar school teachers, and about 1,100 high school teachers. Of these, about one-eighth are men.

Pupils Enrolled. There are about 300,000 primary and grammar school pupils enrolled, and about 30,000 high school pupils. Their schooling costs about \$10,000,000 per year, for all purposes. Six millions of this is for teachers' salaries.

Teachers' Salaries. The lowest salaries are about \$400 per year, for the teachers of small rural schools. Salaries for primary and grammar schools range from \$400 to \$800 per year, with an average of about \$600. Principals get an average of about \$800. High school teachers receive from \$700 to \$1,500 per year, with an average of about \$1,000. High school principals average about \$1,350. The cost of board ranges from \$16 to \$30 per month, averaging about \$24.

Terms and Times. The term of school varies from 8 to 10 months per year, averaging 9 in primary and grammar schools, 9½ in high schools. No school can fall below six months. The terms usually begin in September and close in May or June, although there are many exceptions in the high mountains and along the coast.

CALIFORNIA'S CALL TO THE IMMIGRANT.

By John P. Irish.

It is not pretended that California supplies any specific from the wealth of her soil and sunshine that will cure unthrift, bad judgment, and lack of faculty, or make of the do-less a doer. But there is legitimate basis for the belief that here the average man may work in greater comfort more days in the year, and earn his bread easier, than under the conditions that prevail in any other state or country.

California is a winterless land. No deep frosts chill the ground; vine and fig tree do not have to thaw out as a preliminary to going into business as fruit-bearers. All stone fruits, and the fig, pomegranate, orange, lemon, lime, pear, and apple are precocious bearers. The peach will bloom the second year from the pit. On the Mediterranean the olive fruits meagerly at seventeen years of age; here it bears a full crop at seven. In the East he must be a young man who plants a tree expecting to repose in its shade or to eat its fruit. Here old men may plant, and surely expect to enjoy the results. The growth of animals is not checked here by the withering winter, and a yearling horse is the equal of any Eastern two-year-old.

But, it may be asked, is not this precocity of animate and inanimate life compensated by early decay? The answer is, No. That rule has here its exception. The peach tree that blooms before the shell of the pit that bore it is decayed, bears on for thirty years, or more. Olive trees that furnished oil for the sacraments of the old Mission Fathers a hundred years ago, shade the graves of the gardeners who planted them, and ripen their yearly crop with unabated energy.

But men fail in California? Yes. Men who buy land and hire it planted and worked, running it on the absentee landlord system, fail here and everywhere. So do men fail who run manufactures and trade on the same system. But men who take here only so much land as they have the means and the ability to conserve, and can properly till and tend with the labor of their own families, do not fail; for here Nature helps the industrious hand, and nowhere else does intelligent labor add as much to the value of the land, for the reason that here Nature holds one handle of the plow.

The advantage that California has in climate where growth and production go on without pause is seen when the farmer finds his vines and trees, fields and truck-patch producing something for the market every month in the year.

What effect does the climate have on the cost of living? Where the pastures yield natural forage, green or dry, every day; where the water never freezes; where vegetable growth goes on forever, and the storage of vegetables for winter use is never necessary, because they are growing and fresh daily, it is natural that the cost of living should be less than where the summer and fall are spent in hard labor to store food and fuel against the long winter that suspends production. Beef and mutton from the ranges; fish from the waters; fruits and vegetables reach market here in a condition for use more cheaply than elsewhere.

The economic value of climate should be considered in selecting a home; first, in respect to the health of the family, and, second, in respect to the number of days yearly in which your vocation may be followed. California, it may be said, has no endemic diseases. Except in the high Sierra Mountains the snow does not impede outdoor occupation. There are no tornadoes or chilling blasts, nor are there any sudden changes in temperature which imperil life. The heat in the valleys, though high as indicated by the thermometer, is not excessive enough to prevent labor in the fields on the hottest days; because the air being dry, the latent heat of the body is rapidly eliminated, and the blood is kept cool. It will bear repetition that every day in the year is a working day. It follows that it costs less to live in California than in any other state in the Union, and the comfort of life is greater.

The intending settler should fix firmly in his mind the topography of California. We have a winter season called "wet," and a summer season called "dry." In the winter months the average rainfall is about twenty-five inches, distributed

through four months of the year, and this is ample to insure abundant crops. California is 850 miles long. Her coast line extends as far as from Boston to Savannah. At the same altitude the climate is practically the same in the north as in the south of the State; hence San Diego in the south and the country 600 miles to the north produce identically the same crops. On the west slope of the Sierra Nevada Mountains, at an elevation of from 400 to 1,000 feet, is the famous foothill warm belt, stretching from Shasta to Kern County, and noted for the superiority of its fruits, including the fig, orange, lemon, and olive.

There is one great valley; its south end rests on the Tehachapi Mountains, and its north end is lifted up by Mount Shasta. This great trough sags in the middle, and the rivers that run from each end escape into San Francisco Bay through a common delta. From these rivers we name each end of the valley, thus giving the impression that there are two valleys. The north end of the valley is the valley of the Sacramento, with an area of 4,000,000 acres. The south end is the valley of the San Joaquin, with 7,000,000 acres. This valley is the seat of wheat and raisin culture. On the west of this great valley rises the Coast Range, in which lie a number of fertile and extensive valleys, such as Santa Maria, Sonoma, Santa Clara, Vaca, and Suisun. In most of these fruit growing is the principal industry. The slopes of the Coast Range toward the sea and the high Sierras, are favorable for dairying. To some extent, therefore, the settler is guided in the selection of his residence by the business he desires to pursue.

We expend annually over \$7,000,000 for the maintenance of our public schools. The State is entirely out of debt. The financial report shows that the State debt is about \$2,500,000, but this is only a form of statement. There is that amount of State bonds, but the bonds are owned by the State and are covered into the State school fund. The State pays the interest to the State school fund, which is annually apportioned to the public schools. If California has a reputation for public extravagance it is undeserved, and the intending immigrant need not hesitate for fear his interests will suffer by reason of high taxation, due to the waste of public money.

It is not given to all men to be wealthy; but every original fortune in this country was founded in some man's determination to make a living and provide for life's decline when labor is impossible. Immigration flows where a living may be made under the most favorable conditions. The variety of resources in California invites an equal variety of tastes, training, and experience. If a man desires to mine, along the western flank of the Sierra Nevada Mountains for 800 miles is the world's greatest gold field. It has already yielded \$1,000,000,000 from the merest scratching of its surface.

Horticulture here rises to the rank of a profession. Our soil and climate are so adapted to it that fruits from every zone may be grown. The clemency of our climate and its halcyon quality invite enterprise and ingenuity to experiment in all horticultural refinements. No equal area of the earth's surface has produced profitably a variety of the fruits of tree, vine, and shrub equal to that of California.

The beginning of all successful manufacture is in the transmutation of the most abundant raw material into more merchantable or more permanent forms for transportation and use at a distance. The State is not yet sufficiently supplied with plants for drying and canning our surplus fruits, or for reducing them to fine jellies, jams, pickles, pastes, etc. Immigrants who have a taste for these arts will find here a growing field.

No place presents better facilities for variety farming as it is practiced in the Mississippi Valley. With a small tract of land which may be cared for by the labor of an ordinary family, with some orchard or vineyard bordered with almond and English walnut trees, producing some alfalfa and grain, and carrying some cows, pigs, and chickens, the owner will find something produced for market every day in the year, while his family living will nearly all come direct from the soil he tills.

The reader will find the subjects herein generalized treated in greater detail in other chapters of this book. The treatment is conservative, and is intended to invite that careful personal examination which the prudent man makes who desires to better his condition by changing his abode.

HISTORICAL SKETCH OF CALIFORNIA.

To justify and strengthen the claims made of the wonderful development of California in the short time of the sixty years of her statehood, it is well to give in connection with the statistics and facts set forth in the preceding pages, a short resume of her history.

It is not only rich in romance, but it presents many and diverse elements in its making. The modern history of the State has its beginning in 1533, when Fortum Jimenez, in sailing between Mexico and the Philippines, sighted the land of the lower peninsula. Two years later, instigated by his desire for further information about the unknown land, Cortez landed on the shores of the lower end of the peninsula, and through its apparent similarity to those mystical islands spoken of in the old Spanish romance, "Sergius de Esplandian," of which the author speaks in glowing terms and says it is a "group of islands, and on the great island of California there is an abundance of gold and precious stones." Believing that this land resembled that land, Cortez named it California, and established a colony.

In 1542 Cabrillo sailed along the shores of California, and something more than a century later Viscaino explored it, mapping the bays of San Diego and Monterey. In 1579 Sir Francis Drake, who held a roving commission from Queen Elizabeth to "prey upon all Spanish ships," sailed along the shore past the Golden Gate, and beached his ship at a cove which is now known as "Drake's Bay," a few miles north of San Francisco Bay. The English language, consequently, was spoken in California before the pilgrims landed on Plymouth Rock. Owing to the bold headlands of the cliffs along the coast, Drake named the country "New Albion."

Two hundred years after Drake raided the Spanish galleons loaded with the treasures of the Orient, Spain desired to extend her possessions to the north on the Pacific Coast, and in 1769 Gaspar de Portola, who was appointed governor of the Californians under royal decree, led an expedition into California for the occupation and fortification of the ports of San Diego and Monterey, and Father Junipero Serra, a Franciscan priest, was given permission to accompany the expedition and to establish missions under protection of the soldiers.

The expedition was divided into four detachments which set out both by land and by sea, and on July 16, 1769, the mission at San Diego was founded after the expeditions had placed the port in good condition for defense. Portola started forward on his mission to occupy Monterey Bay, as soon as possible, in spite of the depleted and exhausted condition of his forces. He advanced northward, but failed to locate Monterey Bay and passed on to the shores of San Francisco Bay, which were reached on November 2, 1769, by the advance explorers, and by the main body and its leader on November 4th. A second expedition was sent forward during the following year, after the return of Portola and his party to San Diego, and Monterey Bay was rediscovered on June 3, 1770, and the presidio and mission founded. The Presidio of San Francisco was established September 17, 1776, and the mission on October 8th of the same year. In 1823 the last mission in California was established at Sonoma.

In 1822 Mexico severed her connection with Spain and claimed territory to the north even further than exploration had been made. Coming from the opposite direction, Russia also established colonies, and for a time there was divided rule of the country now comprised in the State. The new republican government of Mexico was antagonistic to the church, and the Mexican congress passed a law providing for the dispersion of the Franciscan fathers and the division of their vast holdings among the settlers and Indians. The missions were stripped of their wealth, the buildings were neglected, the Indians scattered and the land was divided up into large ranches which were given to favorites of the administration.

When the United States, realizing that a war with Mexico was imminent, sent General John C. Fremont to explore and examine the land, it looked for an easy conquest and acquisition of a rich territory. By this time a large number of

Americans had straggled across the plains, and round by way of the isthmus. A strong spirit of local independence developed among them, which led to jealousy of Mexican control and many bitter political feuds.

All the circumstances connected with the American seizure of California will probably never be known, as all the actors of that drama have passed away and the National archives contain no public documents bearing on it. Fremont was sent on what was supposed to be a scientific expedition, but he received a verbal message sent from Washington through an officer dispatched for that purpose. He at once made his way to Sutter's Fort at the point where Sacramento now stands, and thence to Sonoma, where he organized a battalion of mounted riflemen. On June 14, 1846, after Fremont had gone south, the Americans at Sonoma took possession of the town and raised the Bear Flag. On the 5th of July following, the Bear Flag party announced its independence, made Fremont governor, and declared war against Mexico. Two days later Commodore Sloat, under orders from the United States Government, raised the United States flag at Monterey, seizing the town and imprisoning the Mexican officials, and at the same time Captain Montgomery raised the flag in San Francisco. Two years later, in 1848, by treaty with Mexico, California became a possession of the United States.

On January 24, 1848, John W. Marshall discovered gold in the tail-race of Sutter's mill, and when this fact reached the outer world there was the first great rush to gold-fields, and within two years more than 100,000 men of all nations had settled in the State.

Upon its acquisition United States revenue laws were extended over the new territory, and San Francisco was made a port of entry, but nothing further was done toward establishing government. Politics entered largely into the question of California's disposition, and the question of slavery or no slavery was raised. But the people of California tired of Congress' dilatoriness and in 1849 they framed a constitution, in which it was declared that no slavery should exist in the State. With this constitution representations were made to Congress, and on September 9, 1850, California was admitted into the Union without having gone through the preliminary of having a territorial form of government.

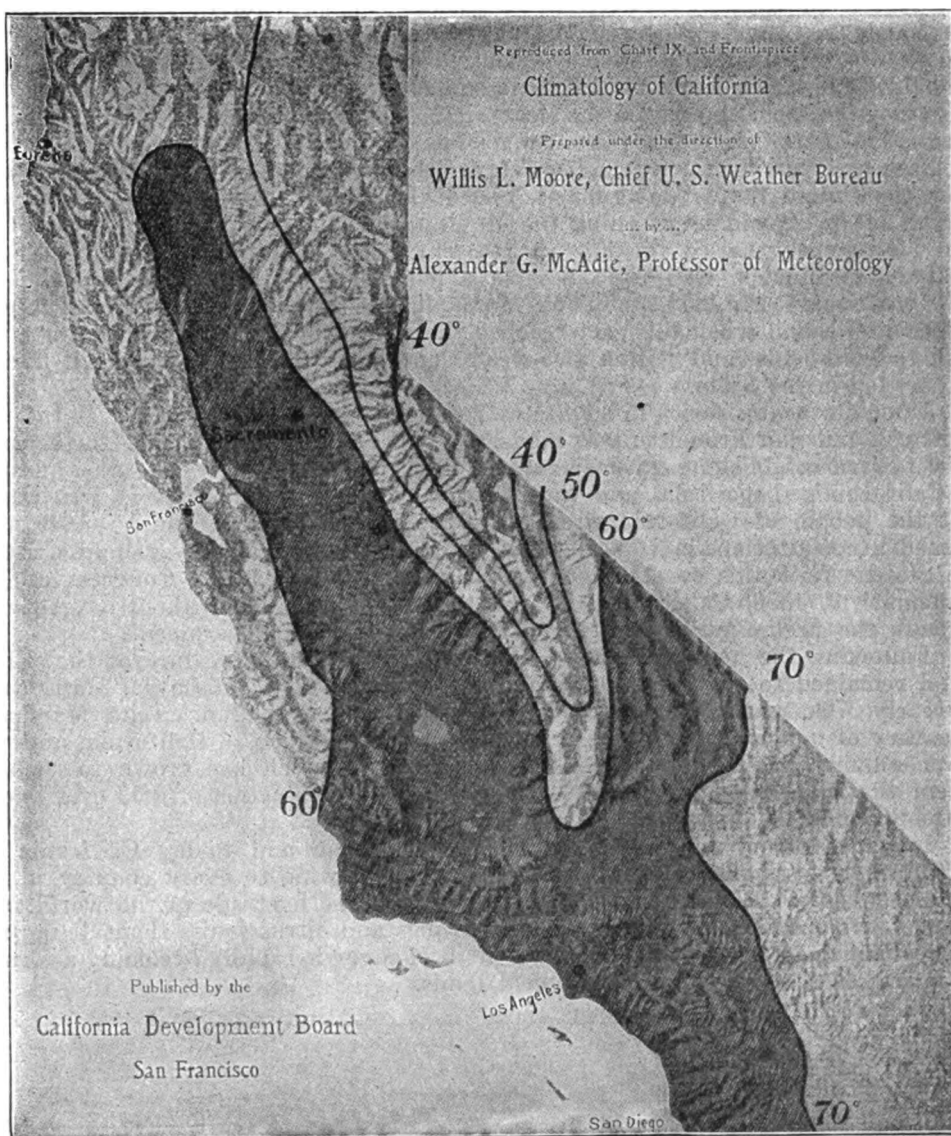
Following the gold excitement those who came under the lure of the yellow metal remained to till the ground, and the second "gold" discovery dates from the early '70s, when the navel orange cultivation was begun. Like Marshall's discovery of gold it was the magnet which drew thousands to California, and was the beginning of the great horticultural industry which has grown to such an extent that it now exceeds every year, the highest production of gold ever known in the State.

Its later history embraces progress in cultivation, and to-day California exports prunes to France, raisins to Spain and Italy, wine to every country in Europe, oranges to all the world and will soon take the fig trade of the world from Smyrna. It produces more wine raisins, prunes and citrus fruits than all the rest of the United States put together, and its beet-sugar is rapidly becoming a formidable rival to the cane-sugar of tropical lands.

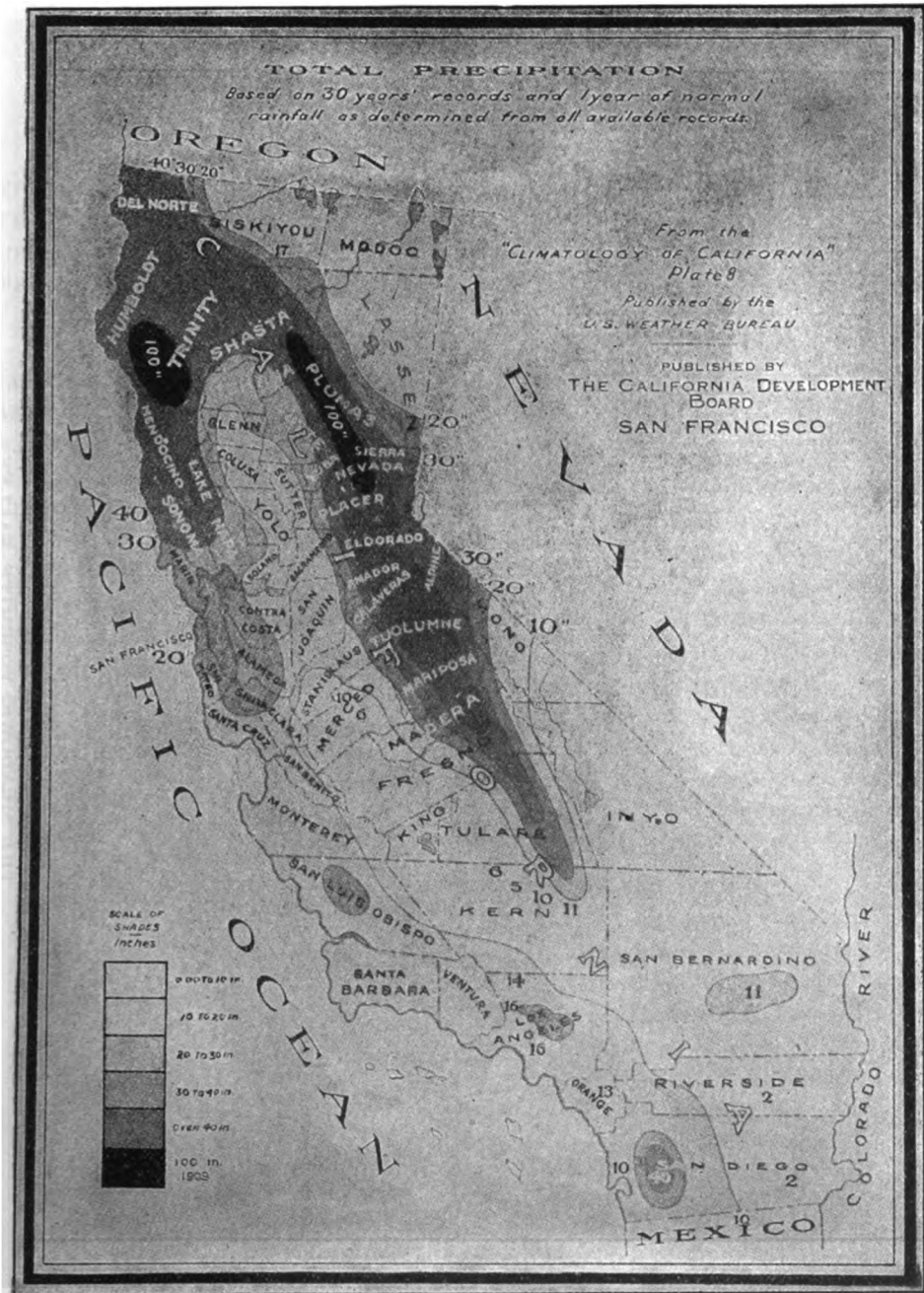


ALCATRAZ ISLAND.

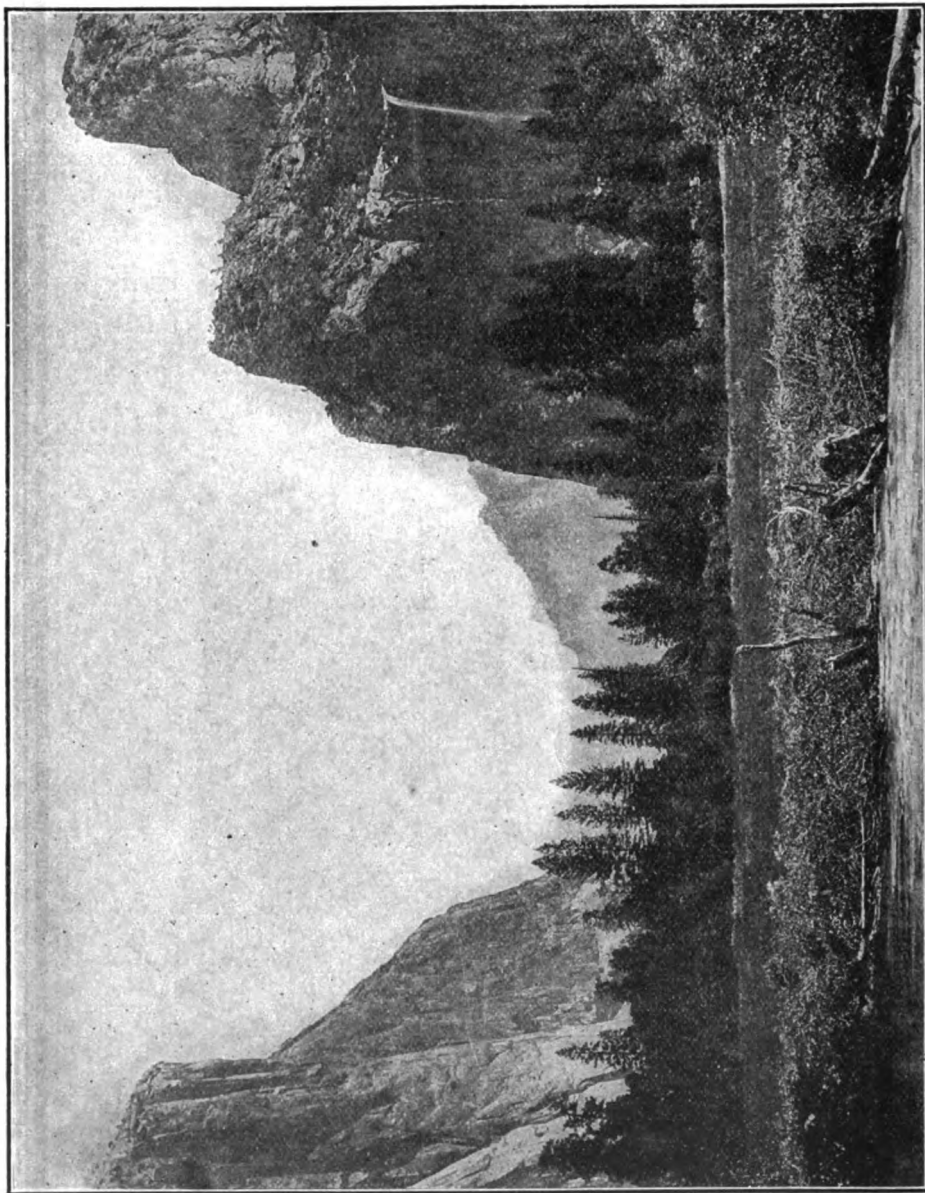
CALIFORNIA'S THERMAL BELT
Mean Annual Isotherms Based on 30 Years' Normals



Note.—60-70 degrees shown in black.



RAINFALL MAP.



THE MEADOWS, YOSEMITE VALLEY.

CALIFORNIA DEVELOPMENT BOARD

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 ROBERT NEWTON LYNCH.....".....Counties north of the Bay
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 WM. J. DUTTON.....".....Fireman's Fund Insurance Co.
 FRANK L. BROWN.....".....Brown-Walker-Simmons Co.
 R. B. HALE.....".....Hale Brothers, Inc.
 ALFRED I. ESBERG.....".....M. A. Gunst & Co.
 F. TILLMANN, JR.".....Tillmann & Bendel
 A. B. C. DOHRMANN.....".....Nathan-Dohrmann Co.
 FREDERICK J. KOSTER.....".....California Barrel Co.

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 BENJAMIN IDE WHEELER.....President, University of California
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Stanislaus	J. W. DAVISON, Modesto
Sutter	B. F. WALTON, Yuba City
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Tulare	ARTHUR E. MIOT, Visalia
Yolo	T. B. GIBSON, Woodland
Yuba	A. L. McDONALD, San Francisco
North of Bay Counties Assn.	ROBERT NEWTON LYNCH, Petaluma

INDIVIDUALS, FIRMS AND CORPORATIONS

	Representative
Anglo & London Paris National Bank.....	C. F. HUNT
Baker & Hamilton	WAKEFIELD BAKER
Bank of California	IRVING F. MOULTON
Brewers Protective Association	J. A. HIERONIMUS
Briggs, Arthur R.	
Brown-Walker-Simmons Co.	FRANK L. BROWN
California Barrel Co.	FREDERICK J. KOSTER
California Door Co.	E. H. KITTREDGE
Crocker National Bank	J. B. McCARGAR
Fairmont Hotel	C. A. COOKE
Fireman's Fund Insurance Co.	WILLIAM J. DUTTON
First National Bank of San Francisco	C. H. McCORMICK
Fuller, W. P., & Co.	
German Savings & Loan Society	GEORGE TOURNY
Gerstle, William L.	
Gunst, M. A. & Co.	A. I. ESBERG
Hale Brothers	R. B. HALE
Halsey & Co., N. W.	
Hibernia Savings & Loan Society	R. M. TOBIN
Hind, Rolph & Co.	R. S. CLARKE
Hotel St. Francis	
Mercantile National Bank of San Francisco.....	W. F. BERRY
Meyer, Daniel	HENRY G. MEYER
Miller & Lux	
Nathan-Dohrmann Co.	A. B. C. DOHRMANN
Paula Oil Co.	GEORGE L. WALKER
Rollins & Sons	A. W. BULLARD
San Francisco Gas & Electric Co.	
Schilling, A. & Co.	CARL SCHILLING
Sloss, Louis & Co.	
Sperry Flour Co.	
Standard Oil Co.	W. S. RHEEM
Standard Portland Cement Co.	L. E. AUBURY
Studebaker Brothers Co.	
Tillmann & Bendel.....	FRED. TILLMANN, Jr.
United Railroads	
Wells Fargo Nevada National Bank	JOHN P. IRISH

ASSOCIATE MEMBERS

Abiko, K.	Newspaper	340	Mason Street
Abrams, Henry M. Co.	Wholesale Jeweler	717	Market Street
Adams, James H. & Co.	Bonds		Alaska Commercial Building
Adams, W. J.	Lumber and Shipping	310	California Street
Ahrens, Bullwinkel Co.	Wines and Liquors		1st and Harrison Streets
Alameda County Abstract Co.		426	10th Street, Oakland
Alameda Sugar Co.			Hanford Building
Albion Ale & Porter Brewery (Burnell & Co.)		494	O'Farrell Street
Alexander & Baldwin, Ltd.	Shipping and Commission		Alaska Commercial Bldg.
Allen & Higgins Lumber Co.			Spear and Howard Streets
Allen, Wiley B. Co.	Pianos	135	Kearny Street
Althof & Bahls	Printers	330	Jackson Street
American Biscuit Co.		815	Battery Street
American Can Co.			Mills Building
American Chocolate Co.		26	Bluxome Street
American Import Co.		16	First Street
American Milling Co.	Flour, Grain	165	Erie Street
American National Bank			Merchants Exchange Bldg.
Ames-Harris-Neville Co.	Bags, Tents, Awnings	607-609	Front Street
Amrath, Greenhood & Jansen	Accountants		Monadnock Building
Anderson Brothers	Planing Mill		North Point and Powell Sts.
Anglo-American Crockery & Glass Co.		6th and Yuma Streets	
Applegate & Weill	Proprietors "Chantilly"	342	Sutter Street
Armsby, The J. K. Co.	Dried Fruits, Canned Goods	627	Howard Street
Armstrong, Quatman & Co.	Real Estate and Insurance	227	Montgomery Street
Arnold, Thomas C.	Manufacturers' Agent		Pacific Building
Arnstein, Simon & Co.	Woolen and Trimmings		Aronson Building
Art Floral Co., Inc.		239	Post Street
Associated Oil Co.			Wells-Fargo Building
Auto-Livery Co.		66	Fulton Street
Automatic Printing Co.	Printers	343	Front Street
Bachman, S. & Co., Inc.	Cigars and Tobacco		Commercial and Front Sts.
Bachrach & Co.	Advertising	556	Market Street
Baldwin Co., The	Pianos, Organs	310	Sutter Street
Baldwin, Edward L. Co.	Drugs	22	Market Street
Baldwin Jewelry Co.	Jewelers and Goldsmiths	29	Kearny Street
Baldwin & Howell	Real Estate	318	Kearny Street
Balfour, Guthrie & Co.	Shipping and Commission	350	California Street
Ballard, Dr. J. Stowe		3303	Clay Street
Balloon Route Excursion Co.		735	Market Street
Banca Popolare Opera Italiana			Montg. Ave and Montg. St.
Bancroft, Philip	Attorney		Monadnock Building
Bank of British North America		120	Sansome Street
Bank of Italy			Montgomery and Clay Streets
Bare Brothers	Furniture, Carpets	255	Geary Street
Barnard & Bunker	Grain and Beans		California and Front Streets
Baron, W.	Ladies' Tailor	118	Geary Street
Barth, J. & Co.	Brokers	480	California Street
Barth, Rudolph	Jeweler	56	Kearny Street
Bass-Hueter Paint Co.		818	Mission Street
Bausch & Lomb Optical Co.		154	Sutter Street
Bay City Iron Works		1243-1245	Harrison Street
Bay City Market		970	Market Street
Becht, Geo. J. Co.	Manufacturers' Agents	361	Ellis Street
Bekins Van & Storage Co.		190	West Mission Street
Belshaw, C. M.			Humboldt Bank Building
Bemis Bros. Bag Co.			Sansome and Vallejo Streets
Bender, D. A.	Conservative Rubber Producing Co.	975	Monadnock Building
Bernhard, John	Sunset Barber Shop	2	Hardie Place
Bernstein, H. & Co.	Mission Toggery	3293	Mission Street
Bill, L. H. & B. I.	Auto Supplies	132	Valencia Street
Billings, L. H.	Clothing, Hats, etc.	1981-3	Mission Street
Bishop's A. B. C. Guide		62	Fremont Street
Bissinger & Co.	Hides		Front and Jackson Streets
Blake, Moffitt & Towne	Paper	4th and Illinois Streets	
Bliss & Faville	Architects		Albion Building
Boardman Bros. & Co.	Real Estate and Insurance	508	California Street
Bocarde Drayage, J. B. Co.		55	Sacramento Street
Boesch Lamp Co.		1135	Mission Street
Bohannon, Dr. J. L.		140	Claremont Av., Oakland
Bollman, John Co.	Cigarettes and Tobacco	331	Battery Street
Bonestell & Co.	Paper	118	First Street
Bowers Rubber Co.		68	Sacramento Street
Bradley, Milton Co.	School Supplies	575	Market Street
Brandenstein, M. J. & Co.	Coffee and Tea	126	Mission Street
Braun-Knecht & Heilmann Co.	Industrial Chemists	576	Mission Street
Breite, W. W.	Structural Engineer		Clunie Building
Britton & Rey	Lithographers and Printers	560	Sacramento Street
Brizzolara & Sons, Inc., L.	Coal and Wood	117	Jackson Street
Brooks-Follis Electrical Corporation		44	Second Street
Brown, Chas. & Sons, Inc.	Stoves, Crockery	871	Market Street
Brown, Edward & Sons	Insurance	310	Sansome Street
Brown, Herbert F.	Real Estate		Phelan Building
Brunswicke-Balke-Collender Co.	Billiard Tables and Bar Fixtures	767	Mission Street
Bryant, Dr. Edgar R.		350	Post Street
Buchanan, Wm.	Brush Manufacturer and Hardware	623	Sacramento Street
Bullock & Jones Co.	Tailors		Post and Kearny Streets
Bunster & Saxe Co.	Furniture and Carpets		Eddy and Larkin Streets
Butler, Schutze Co.	Wholesale Millinery	731	Market Street

Cahn, Nickelsberg & Co.	Wholesale Boots and Shoes	557 Mission Street
Caire, Justinian Co.	Hardware	573 Market Street
California Artistic Metal & Wire Co.		349 Seventh Street
California Fig Syrup Co.		16th and Church Streets
California Fruit Canners' Assn.		112 Market Street
California Glue Works		Merchants Exchange Bldg.
California-Hawaiian Sugar Refining Co.		254 California Street
California Hydraulic Eng. & Sup. Co.		523 Market Street
California Ink Co.		33 Clementina Street
California Insurance Co.		550 Sacramento Street
California Jewelry Co.		704 Market Street
California Optical Co.		181 Post Street
California Paper & Board Mill Co.		310 California Street
California Paper Box Co.		3175 17th Street
California Pine Box & Lumber Co.		Flood Building
California Press	Printers	50 Main Street
California Rug Co.		2147 Lombard Street
California Salt Co.		16 California Street
California Suburban Home Co.		1480 Market Street
California Sugar & White Pine Agcy.		Flood Building
California Transportation Co.	Bay and River Steamers	Pier 5, Jackson Street
California Wine Assn.		180 Townsend Street
Callen, M. D.		Post Office Building
Campi's	Italian Restaurant	605 Montgomery Street
Canadian Bank of Commerce		Sansome and California Sts.
Capelle, Robert	Steamship Agent	250 Post Street
Capwell, H. C. Co.	Dry Goods	12th and Washington Streets, Oakland
Carl Cooperage Co.		54 Boardman Place
Carlisle, A. & Co.	Stationers and Printers	251 Bush Street
Carlson-Currier Co.	Wholesale Silks	Sansome and Bush Streets
Carnegie Brick & Pottery Co.		638 Montgomery Street
Carquinez Brick & Tile Co.		259 Russ Building
Carrau & Green	Wholesale Jewelers	112 Kearny Street
Carroll, Paul T.	Men's Furnishings	708 Market Street
Carroll & Tilton Co.	Clothiers	733 Market Street
Cassaretto, John	Contractor	345 Berry Street
Castle Brothers	Coffee, Commission	149 California Street
Castleton, E. Drexel		New York City, N. Y.
Central Coal Co.		Spear and Folsom Streets
Central Trust Co.		Sutter, Sansome, Market Sts.
Charlton, E. P. Co.	5, 10, 15c Store	786 Market Street
Chinn-Beretta Optical Co.		120 Geary Street
City of Canton		Oakland
City of Paris Dry Goods Co.		Geary and Stockton Streets
City Street Improvement Co.	Contractors Street Work	Merchants Exchange Bldg.
Clarion, The	Clothiers and Tailors	867 Market Street
Clarke, D. Ross	Plastering Contractor	708 Pacific Building
Cluett, Peabody & Co.	Shirts and Collars	812 Howard Street
Coast Realty Co.		Merchants Exchange Bldg.
Coats, M. C.	Advertiser	23 Montgomery Street
Coffey Belting Co.		Los Angeles
Coffin, Redington Co.	Wholesale Drugs	35 Second Street
Coleman, Robert L.	Cigars	Union Trust Building
Columbia Marble Co.		Hanford Building
Commercial Supply Co.	Filing Cabinets, etc.	75 Fourth Street
Commercial Union Assurance Co.		Security Building
Compressed Air Machinery Co.		Jessie and Ecker Streets
Conlisk, C. W.	Secretary Hotaling Estate Co.	Merchants Exchange Bldg.
Continental Building & Loan Assn.		Golden Gate Ave. & Taylor
Convey & Sons	Butchers	8 Clay Street
Cook, A. J. & J. R.	Leather	171 Clay Street
Cosmos Cafe		658 Market Street
Cotati Co., The	Real Estate	310 California Street
Cowell Lime & Cement, Henry Co.		95 Market Street
Cowen-Heineberg Co.	Crockery	529 Market Street
Criswell, Dr. R. B.		Union Square Building
Crocker Estate Co.		Crocker Building
Crocker, H. S. Co.	Printers, Stationers	460 Market Street
Crown Distilleries		27 Minna Street
Cunningham, Curtiss & Welch	Stationers, Booksellers	565 Market Street
Cutting, C. T.	Manager Lamson Con. Store Service Co.	Call Building
Cyclops Iron Works		223 Main Street
Dalziel-Moller Co.	Plumbers' Supplies	543 Mission Street
Davis, J. B. F. & Son	Insurance Brokers	507 Montgomery Street
Day Company, Thomas	Gas and Electric Fixtures	725 Mission Street
Deamer & Stetson	Attorneys	Mills Building
Deckelman Brothers	Barbers' Supplies	162 Turk Street
de Fremery, James & Co.	Importers and Exporters	519 Mission Street
Degen Belting, L. P. Co.	Manufacturers Leather Belting, Etc.	260 Mission Street
De La Tour, George	Beaulieu Vineyard	Rutherford, California
De Laval Dairy & Supply Co.		101 Drumm Street
De Martini Supply Co.	Confectioners' Supplies	128 Front Street
Denison News Company		Oakland, California
Denniston, E. G.	Plating	1349 Mission Street
Detjen & Mengel Co.	Cafe and Restaurant	97 Market Street
Dibblee Estate Co.		Union Trust Building
Dinkelspiel, J. S.	Diamond Importer	Jewelers' Building
Di Nola, Leon & Co.	Druggist	598 Haight Street
Doak Sheet Steel Co.		Eighth and Irwin Streets
Dodge, D. W.	Railway Supplies	Chronicle Building
Dodge, Sweeney Co.	Wholesale Provisions	5 Spear Street
Dollar, Robert, Co.	Shipping and Lumber	160 California Street

Dorgeloh, H. F.	Coast Manager Hamburg-American Line.	160 Powell Street
Dorrance Battin Co.	Jobbers and Manufacturers' Agents.	906 Chronicle Building
Dow Pumping Co., G. E.		179 First Street
Drew, Frank C.	Attorney	Balboa Building
Dun, R. G. & Co.	Mercantile Agency	125 O'Farrell Street
Dunbar-Hansen Co.	Produce	322 Drumm Street
Dunham, Carrigan & Hayden Co.	Hardware	100 Kansas Street
Du Pont de Nemours E. I. Powder Co.	West Coast Division	Chronicle Building
Eagle Laundry Co.	Laundry	53 Colton Street
Eagle Tannery		26th St. and San Bruno Ave.
Eastern Oregon Land Co.		702 Call Building
Easton Brothers.	Butchers	1323 Polk Street
Eby Machinery Co.		268 Market Street
Ecklon-Metzger Co.		Post and Polk Streets
Eilers Music Co.		975 Market Street
Eisenberg, A. & Co.	Wholesale Jewelers	Kearny and Post Streets
Electric Appliance Co.		726 Mission Street
Ellery Arms Co.	Sporting and Athletic Goods.	48 Geary Street
Eloesser-Heynemann Co.	Manufacturers Overalls and Shirts.	77 Battery Street
Emmanuel, L. & E.	Bar and Office Fixtures.	144 12th Street
Eucalyptus Culture Co.		578 Monadnock Building
Fannin & Elmendorf Co.	Wholesale Hatters.	149 New Montgomery Street
Fee, Grant	Contractor and Builder	279 Monadnock Building
Fisher & Co., Inc.		726 Market Street
Fischbeck Soap Co.		17th and Rhode Island Sta.
Fisher, L. P.	Advertising Agent.	Merchants Exchange Bldg.
Fleishhacker & Co.	Paper Boxes.	134 Fremont Street
Fletcher, Dr. Thomas.		169 Collingwood Street
Floreston Pulp & Paper Co.		Alaska Commercial Bldg.
Folger, J. A. & Co.	Wholesale Coffee and Teas.	Spear and Howard Streets
Ford, C. W. R. & Co.	Tailors' Trimmings.	164 Sutter Street
Forreder Cornice Works.		16th and Potrero
Foster & Orear	Candies, Cigars, News Sundries	Ferry Building
Frank, A. L.	Haberdasher	106 Kearny Street
Fredericks, Joseph & Co.	Furniture, Carpets, Etc.	819 Ellis Street
Freeman, Allan G.	President Continental Salt Co.	629 Howard Street
Freer, Burr W.	Wholesale Jeweler	717 Market Street
French American Bank.		108 Sutter Street
French American Wine Co.		1821 Harrison Street
French & Linforth.	Manufacturers' Agents	Wells Fargo Building
Friedman, M. & Co.	Furniture and Carpets.	273 Post Street
Fritch, J. Homer, Inc.	Coal and Wood.	110 East Street
Gantner & Mattern Co.	Knitted Goods and Underwear.	Grant Ave. and Post Street
Garcia & Maggini Co.	Commission Merchants.	108 Washington Street
Getz Brothers & Co.	Wholesale Grocers.	530 Davis Street
Ghirardelli, D. Co.	Chocolate and Cocoa	940 North Point Street
Giacobbi, Louis A.	Jeweler	222 Kearny Street
Giant Powder Co., Con.		Kohl Building
Gier Wine, The Theo. Co.	Wine and Liquor Merchants.	571 18th Street, Oakland
Girvin & Eyre	Importers and Exporters	Merchants Exchange Bldg.
Gladding, McBean & Co.	Manufacturers Terra Cotta, Etc.	311 Crocker Building
Glen, Blair Redwood Co.	Lumber	947 Monadnock Building
Globe Grain & Milling Co.		Chestnut and Montg'y Sta.
Golden Gate Cloak House.		1062 Market Street
Golden Gate Compressed Yeast Co.		26 Mint Avenue
Golden Gate Undertakers.		2483 Mission Street
Golden State Asparagus Co.		16 California Street
Goodyear Rubber Co.		587 Market Street
Gopcevic, Milos M.	Capitalist	233 Sansome Street
Gordon, Eli	Pacific Coast Oyster Co.	90 Sacramento St.
Gorham Rubber Co.		50 Fremont Street
Gorrill, William H.	Attorney	First National Bank
Gottlob Marx & Co.		Columbia Theater
Graham Mfg. Co., James		531 Mission Street
Grauerholz, H. J.	Wholesale Liquors.	2450 Mission Street
Graves-Taylor Hardware Co.		1555 Haight Street
Gray & Co., N.	Undertakers	2198 Geary Street
Gray Brothers	Crushed Rock Company	Wells Fargo Building
Grays Harbor Commercial Co.		Foot of Third Street
Green, J. Charles Co.		Stevenson, near 14th Street
Greensweig, George.	Wholesale Jeweler.	Jewelers' Building
Griffin & Skelley Co.	Fruit Packers	16 California Street
Griffith-Durney Co.	Wholesale Commission.	Fife Building
Guggenheim & Co.	Dried Fruits.	California and Davis Streets
Gullixson Bros. & Co.	Furniture and Carpets.	2086 Market Street
Haas Brothers.	Wholesale Grocers.	200 Davis Street
Haas & Sons, Geo.	Candy Manufacturers.	Phelan Building
Haines, Jones & Cadbury Co.	Plumbers' Supplies.	846 Bryant Street
Hall, A. I. & Son, Inc.	Wholesale Jewelers.	Jewelers' Building
Hamilton, Luke.	Proprietor Dewey House.	4th and Howard Streets
Hammersmith & Co.	Jewelers	Sutter Street and Grant Ave.
Hammon, W. P.	Mining	Alaska Commercial Bldg.
Hanify, J. R. Co.	Wholesale Lumber.	24 Market Street
Harder, P.	Saloon	9 Market Street
Harding, R. T.	Attorney	422 Montgomery Street
Harron, Rickard & McCone	Machinery and Supplies.	139 Townsend Street
Hart & Bros., B.	Wholesale Silk.	14 Sansome Street
Hartford Fire Insurance Co.		430 California Street
Hart-Wood Lumber Co.		Fife Building
Haslett Warehouse Co.		310 California Street

Hathaway, W. L.	Mgr. Mutual Life Ins. Co. of N. Y.	222 Sansome Street
Havens, Wickham	Real Estate	1212 Broadway, Oakland
Hechtman, A. J.	Real Estate	Kohl Building
Heineman & Stern	Provisions	1040 McAllister Street
Heineman, H. M.	Neckwear	1649 Bush Street
Heininger, C. P. & Co.	Pipes and Notions	687 Guerrero Street
Heins Belting Co., Alex.	Leather and Rawhide Belting	2413 Harrison Street
Helbush, H. H.	Wholesale Liquors	Pine and Front Streets
Heller, E. C. & Co.	Clothiers	10 Kearny Street
Henshaw-Bulkley & Co.	Engineers and Machinists	19 Fremont Street
Hensley-Green Co.	Real Estate	Mills Building
Hermann Safe Co.		126 Folsom Street
Herman, Geo. Co.	Shipping and Commission	310 Sacramento Street
Heskins Clothing Mfg. Co.		730 Market Street
Hettrich, A. L. Co.	Beads, Souvenir and Shell Merchant	508 Washington Street
Heyman, Oscar & Bro.	Real Estate	113 Montgomery Street
Heywood Bros. & Wakefield	Furniture	725 Howard Street
Hicks-Judd Co.	Printers and Bookbinders	51-65 First Street
Hicks, Lewis A. Co.	Contractors	Humboldt Bank Building
Hidalgo Plantation & Commercial Co.		Russ Building
Hills Brothers	Coffee and Teas	175 Fremont Street
Hilmer, Fred L. Co.	Wholesale Dairy Produce	129 Davis Street
Hilmerstern Brothers	Crockery and Glassware	718 Mission Street
Hinoy, The	Ladies' and Gents' Tailors	1610 1/2 Geary Street
Hinton, Russell	Painter and Decorator	846 Ellis Street
Hinz & Landt, Inc.	Importers of Millinery	883 Market Street
Hirschfelder & Meaney	Trunk and Suit Case Manufacturers	172 Sutter Street
Hjul, H. H.	Coffee and Lunch House	448 Montgomery Street
Hoag & Lansdale	Real Estate	243 Bush Street
Hoffman, J., Henry		224 Sutter Street
Hoffman, Rothschild & Co.	Wholesale Clothing Manufacturers	516 Market Street
Hogan & Co.	Coopers	326 12th Street
Holmes Co., The	Old and New Books	1158a Market Street
Holt Bros. Co.	Wagon Material	914 Folsom Street
Honolulu Plantation Co.		268 Market Street
Hooker & Lent	Real Estate	503 Market Street
Hooper, C. A. & Co.	Shipping and Lumber	Balboa Building
Hopkins, E. W.	Capitalist	354 Pine Street
Horn & Co.	Wholesale Cigars	40 Drumm Street
Horst, E. Clemens Co.	Hops and Barley	215 Pine Street
Hotaling, A. P. & Co.	Dealers in Whiskey	429 Jackson Street
Hotaling Estate Co., The		Merchants Exchange Bldg.
Hotel Colonial		425 Stockton Street
Hotel Dale		1037 Fillmore Street
Hotel Stanford		250 Kearny Street
Hotel Stewart		353 Geary Street
Howard, E. A. & Co.	Lumber Dealers	20 Howard Street
Hulse-Bradford Co.	Upholstering Goods	286 Mission Street
Hunt Bros		Haywards, California
Hyde, F. A.	Attorney	1255 Broadway, Oakland
Ickelheimer Brothers	Gas Fixtures and Plumbing	441 Sutter Street
Ide, Geo. P. & Co.	Wholesale Shirts and Collars	762 Mission Street
Illinois Pacific Glass Co.		15th and Folsom Streets
International Banking Corporation		Mills Building
Iwakami & Co.	Japanese and Chinese Goods	435 Commercial Street
Jackson Furniture Co.		510 12th Street, Oakland
James, C. L.	Attorney	Call Building
Japanese Construction Co.		104 South Park
Japanese Fancy Goods Importing Co.		1917 Sutter Street
Japanese Tea Garden		Between H and I Streets and 7th and 8th Avenues
Japan Printing Co.	Printing and Publishing	1508 Buchanan Street
Johnson, A. B.		251 Kearny Street
Johnson & Higgins	Average Adjusters and Insurance Brokers	244 California Street
Johnson, J. G.	Wholesale Butcher	333 Kearny Street
Johnson-Locke Mercantile Co.	Shipping and Commission	210 California Street
Jones, Edwin	Hardware & Tools	1180 Market Street
Jones, J. Noble Co.	Investments	Monadnock Building
Jones, S. L. & Co.	Importers	209 California Street
Jones-Paddock Co.	Wholesale Coffee and Tea	230 Fremont Street
Joost, Sons & Co.	Real Estate	3128 16th Street
Judell, H. L. & Co.	Cigar Manufacturers	20 Front Street
Judis, Alphonse Co.	Wholesale Jewelers	704 Market Street
Judson Mfg Co.		819 Folsom Street
Kankoba, Mikado	General Merchandise	1714 Post Street
Karp, Henry	Carpenter and Builder	711 Valencia Street
Katschinski, B.	Philadelphia Shoe Co.	825 Market Street
Katz Brothers	Butchers	California Market
Kauffman, Davidson, Semmel, Inc.	Hides and Wool	137 Clay Street
Keaton, R. N.	Vulcanizing Works	616 Van Ness Avenue
Keefe, J. H.	Painter and Decorator	822 O'Farrell Street
Keilus, Charles Co.	The Hub, High Grade Clothiers	Jewelers' Building
Keller, M. J. Co.	Clothiers	1157 Washington St., Oakland
Kelley-Clarke Co.	Merchandise Brokers	214 Front Street
Keystone Boiler Works		Folsom and Main Streets
Kilborn & Hayden	Proprietors Ferry Cafe	32 Market Street
Kisen, The Co.	Japanese Art and Dry Goods	1911 Fillmore Street
Knowles, William	Architect	506 Mutual Sav. Bank Bldg.
Koenig Shoe Co.		53 Kearny Street

Kohler & Chase.....	Pianos and Musical Merchandise.....	40 O'Farrell Street
Koshland & Co., S.....	Wool.....	110 Market Street
Koster, Frederick J.....	California Barrel Co.....	Monadnock Building
Kreig Tanning Co.....	.....	1703 San Bruno Avenue
Krome, August.....	Grocer.....	1600 Bush Street
Kullman, Salz & Co.....	.....	Benicia, California
Kutner-Goldstein Co.....	General Merchandise.....	Fresno, California
Lachman & Jacobi.....	Wines.....	706 Sansome Street
Lachman, Henry.....	Vice-President Pacific Blower and Heating Co.....	725 Monadnock Building
Lafranchi Brothers.....	Printers.....	433 Sacramento Street
Land & Water, The 76 Co.....	.....	Pacific Building
Lange, M.....	Launches.....	Foot of Washington Street
Langley & Michaels Co.....	Wholesale Druggists.....	34 First Street
Larsen, Carl G.....	Proprietor Tivoli Cafe.....	50 Eddy Street
Larzere, L. R. & Co.....	Shipping and Commission.....	11 Clay Street
Lash's Bitters Co.....	.....	1721 Mission Street
Laymance, M. J.....	Real Estate.....	1214 Broadway, Oakland
LeBallister Duncan, The Co.....	Fire Insurance Men.....	1306 Broadway, Oakland
Legallet-Hellwig Tanning Co.....	Wool Pullers.....	6th Avenue South
Lengfeld's Pharmacy.....	.....	272 Post Street
Levenson & Co.....	Wholesale Wooden and Willow Ware.....	33 Front Street
Levy, Jules & Bro.....	Wholesale Laces.....	16 Sansome Street
Levy, Henry.....	Wholesale Butchers.....	45 Kearny Street
Levy, Schweitzer & Co.....	Wholesale Butchers.....	1412 Bush Street
Lezynski, Fred L.....	Manufacturers' Agent.....	704 Market Street
Liebes, H. & Co.....	Furriers.....	167 Post Street
Lietz, The A. Co.....	Surveying and Nautical Instruments.....	632 Commercial Street
Lippman Bros., Inc.....	Modern Department Store.....	2590 Mission Street
Liverpool, London & Globe Ins. Co.....	.....	444 California Street
Lombard & Son.....	Real Estate, Loans.....	Monadnock Building
Long, J. T.....	Wholesale Butcher.....	Call Building
Long Syrup Refining Co.....	.....	8th and Brannan Streets
Loveland, Col. H. D.....	Vice-Pres. International Mercantile & Bond Co.....	767 Monadnock Building
Lundstrom Hat Works, The.....	.....	1178 Market Street
Luscombe & Isaacs.....	Corsets.....	32 Battery Street
Lyon & Hoag.....	Real Estate.....	636 Market Street
Lyons, Charles.....	Tailor.....	771 Market Street
MacGregor, C. M.....	.....	460 13th Street, Oakland
Macondray Company.....	Commission, Insurance.....	149 California Street
Magnin, I. & Co.....	Ladies', Children's and Infants' Wear.....	Grant Avenue and Geary St.
Mailliard & Schmiedell.....	Commission and Manufacturers' Agents.....	300 Front Street
Malm, C. A. & Co.....	Manufacturers Trunks, Suit Cases.....	266 Bush Street
Marine Trust & Savings Bank.....	.....	100 Market Street
Marks, A.....	Mercantile Guide.....	270 Valencia Street
Marks Brothers.....	Ladies' and Children's Wear.....	831 Market Street
Marshall-Newell Supply Co.....	Hardware.....	146 Steuart Street
Marston, Frank W.....	Real Estate.....	244 Kearny Street
Marye, Geo. T., Jr.....	.....	467 O'Farrell Street
Maskey Candy Co.....	.....	32 Kearny Street
Masow & Morrison.....	Contractors and Builders.....	Monadnock Building
Matson Navigation Co.....	.....	268 Market Street
Maydwell, The Co.....	Manufacturers' Agents.....	Sheldon Building
Mayhew, F. E. & Co.....	Customhouse Brokers.....	510 Battery Street
McDonnell, S. A. & Son.....	Pharmacists.....	Powell and Geary Streets
McLaren, Goode & Co.....	Accountants.....	519 California Street
McLean, L. D. Co.....	Grocery and Household Goods.....	1158 Sutter Street
McLeod Mercantile Co.....	Manufacturers' Agents.....	265 Bush Street
McNear, G. P.....	.....	2-12 Main Street Petaluma
McPartland & Reich.....	News Stand.....	Ferry Building
Meese & Gotfried Co.....	Machinery.....	55 Main Street
Meiji, The.....	Oriental Art.....	1205 Sutter Street
Metten & Gebhardt.....	Tanners.....	135 Trumbull Avenue
Metzger & Franklin.....	Brokers.....	58 Second Street
Meyer, Frederick H.....	Architect.....	Humboldt Bank Building
Meyers, J.....	Wholesale Butcher.....	California Market
Micheletti, P. Co.....	Butchers.....	512 Davis Street
Mills, Miss Emma T.....	School of Dressmaking.....	121 Geary Street
Mitsui & Co.....	Commission and Shipping.....	Merchants Exchange Bldg.
Monarch Oil Refining Co.....	.....	90 Clay Street
Monotti-Larimer Co.....	Wholesale Dairy Produce.....	32 Page Street
Montague, W. W. & Co.....	Stoves, Tinnerns' Stock, etc.....	557 Market Street
Moore, C. C. & Co.....	Engineers.....	99 First Street
Moore-Watson Dry Goods Co.....	.....	Bush and Sansome Streets
Morgan & Allen Co.....	Manufacturers' Agts. Silverware and Cutlery.....	150 Post Street
Morgan, L. & Co.....	Millinery.....	2530 Mission Street
Morgan, W. & Co.....	Heating and Ventilating.....	Monadnock Building
Morrison, William H.....	.....	Phelan Building
Morse, C. C. & Co.....	Seeds, Bulbs and Plants.....	48 Jackson Street
Moss, S. A.....	Mining.....	Alaska Commercial Bldg.
Motoyoshi Studio.....	.....	2009 1-2 Fillmore Street
Mott, Frank K. Co.....	.....	1060 Broadway, Oakland
Mount Shasta Mineral Springs.....	.....	6th and Bryant Streets
Murdock, C. A. & Co.....	Printers, Publishers and Bookbinders.....	68 Fremont Street
Murray & Ready.....	Employment Agency.....	11th and Market Streets
Mutual Engineering Co.....	.....	1580 Bryant Street
Mutual Savings Bank.....	.....	Mutual Savings Bank Bldg.
Myers, R. & L. Co.....	Jewelers' Supplies.....	717 Market Street
Napa and Sonoma Wine Co.....	California Wines and Brandies.....	10th and Mission Streets
National Ice and Cold Storage Co.....	.....	268 Market Street
Natomas Consolidated of California.....	.....	Alaska Commercial Building
Neustadter Brothers.....	Wholesale Men's Furnishing Goods.....	1st and Mission Streets

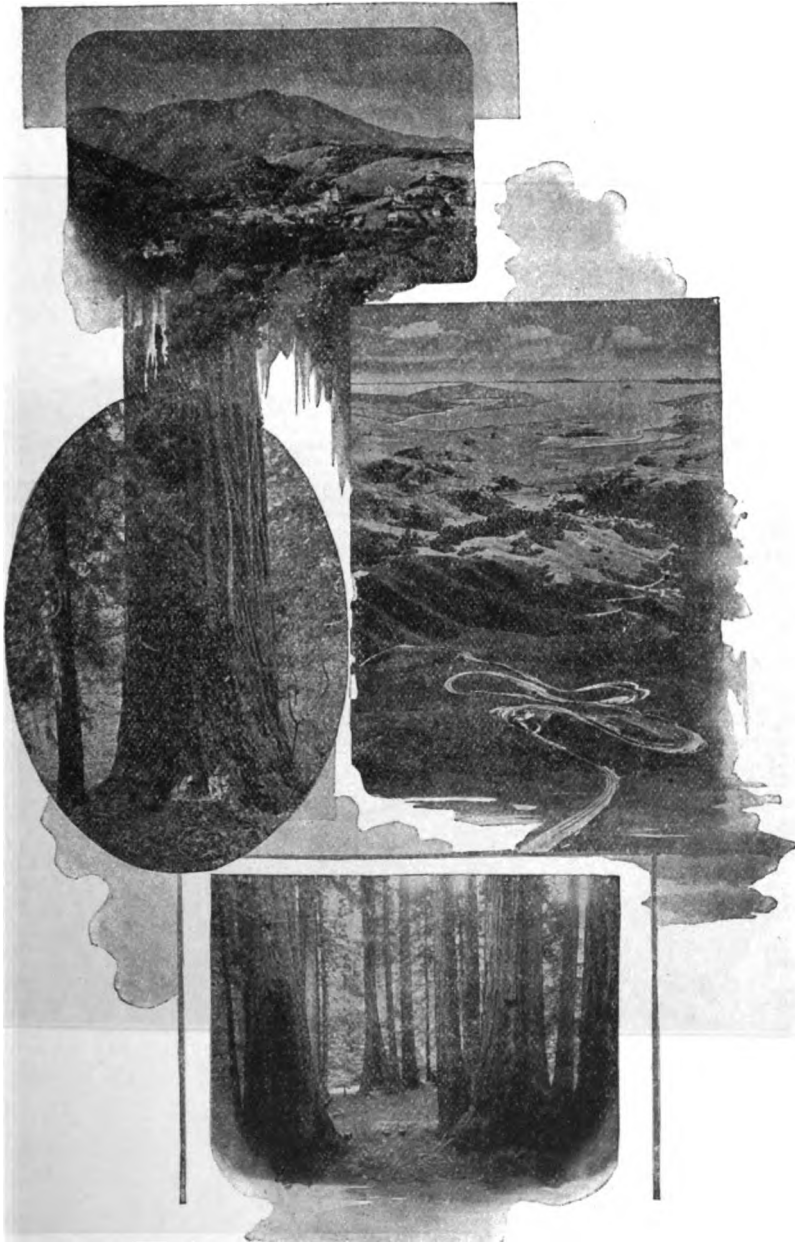
Nevada Gypsum, The Co.	Pacific Building
New Alcazar Theatre	Sutter and Steiner Streets
Newman & Levinson	Stockton and O'Farrell Sts.
Nippert, Paul M. & Co., Inc.	244 Kearny Street
Noble, W. R. & Co.	Sacramento, California
Nolan Drayage and Warehouse Co.	625 Howard Street
Nolan-Earl Shoe Co.	727 Mission Street
Nonotuck Silk Co.	515 Market Street
Nordman Brothers	150 Post Street
North American Mercantile Co.	318 Front Street
North Point Warehouse	Mason and Bay Streets
Norton Tanning Co., The	312 Clay Street
Nozaki Brothers	323 Sacramento Street
Nutting, S. E. & Co.	California Market
Nye & Nissen	16 California Street
O'Connor, Moffatt & Co.	Dry Goods, Etc.
Odeon Cafe	Post and Kearny Streets
Okada & Ichida Co.	Market and Eddy Streets
Okubo, Dr. I.	323 Clay Street
Oliver, F. S.	1765 Sutter Street
Olsen, J. J. & Son	Humboldt Bank Bldg.
O'Rourke-Eubanks Hat Co.	Market and Front Streets
Orpheum Co.	785 Mission Street
Otis Elevator Co.	O'Farrell, nr. Stockton St.
Owl Drug Co.	Beach and Stockton Streets
	611 Mission Street
Pacific Box Factory, Inc.	Clay and Front Streets
Pacific Cereal Association	Bay, nr. Taylor Street
Pacific Coast Coal Company	Merchants Exchange Bldg.
Pacific Coast Glass Works	7th and Irwin Streets
Pacific Coast Paper Co.	545 Mission Street
Pacific Coast Steamship Co.	112 Market Street
Pacific Coast Syrup Co.	713 Sansome Street
Pacific Guano & Fertilizer Co.	268 Market Street
Pacific Jupiter Steel Co.	Postal Telegraph Building
Pacific Mail S. S. Company	384 Flood Building
Pacific Metal Works	153 First Street
Pacific Mutual Life Insurance Co.	Shreve Building
Pacific Portland Cement Co.	Pacific Building
Pacific Refining & Roofing Co.	Monadnock Building
Pacific States Savings & Loan Co.	569 California Street
Pacific Surety Company	101 Sansome Street
Pacific Syndicate Co.	890 Market Street
Pacific Tank & Pipe Company	318 Market Street
Pacific Tool & Supply Co.	Fremont and Mission Streets
Pacific Trunk & Bag Co.	317 Front Street
Paige, H. L.	128 Sutter Street
Palace Hotel Company	California and Mason Streets
Paraffine Paint Co.	Merchants Exchange Bldg.
Parcells Safe Co.	575 Market Street
Pasquale, B. Co.	115 Post Street
Patek, F. & Co.	Butchers
Patrick & Co.	916 Larkin Street
Patton, Chas. L.	560 Market Street
Payne's Bolt Works	Claus Spreckels Bldg
Payot, Stratford & Kerr	133 Howard Street
Peck-Judah Co., Inc.	62 Fremont Street
Pelton Water Wheel Co.	789 Market Street
Petaluma & Santa Rosa Ry. Co.	Monadnock Building
Petersen, Jacob	Petaluma, California
Pfister, J. J. Knitting Co.	7 Market Street
Phillips, M. & Co.	739 Market Street
Phoenix Packing Company	62 Pine Street
Pierce Arrow Sales, The Co.	16 California Street
Pierson, Roeding & Co.	330 Van Ness Avenue
Pioneer Automobile Co.	407 Monadnock Building
Pippy, Col. George H.	901 Golden Gate Avenue
Pischel, Dr. Kaspar	Humboldt Bank Building
Pitts, That Man	Butler Building
Plummer, Geo. F. & Co.	771 Market Street
Plummer, W. P.	54 Steuart Street
Poetsch & Peterson	Manager Mrs. Elsie A. Drexler
Polk-Husted Directory Co.	611 Claus Spreckels Bldg.
Pollitz, Edward & Co.	2112 Army Street
Pope & Talbot	906 Broadway, Oakland
Port Costa Milling Co.	419 California Street
Potter, E. E.	Foot of Third Street
Price, Waterhouse Company	280 Battery Street
Punnett Bros.	576 Sacramento Street
	Alaska Commercial Bldg.
	333 Kearny Street
Radke & Company	Jewelers
Ransohoff, L.	219 Post Street
Rapp, John & Son	Suits and Cloaks
Realty Syndicate, The	1655 Van Ness Avenue
Redlick-Newman Company	8th and Townsend Streets
Reid Brothers	1218 Broadway, Oakland
Rhine & Co., Henry	2200 Mission Street
Richards, W. W.	Call Building
Ridson Iron Works	19th and Bryant Streets
Rochdale Wholesale Co., Inc.	Albany Block, Oakland
Roebing, John Sons & Co.	Steuart and Folsom Streets
Rogers, W. J.	228 Commercial Street
Rogers & Stone Co.	624 Folsom Street
Roach, J. W.	477 Monadnock Building
	30 Montgomery Street
	135 Stockton Street

ASSOCIATE MEMBERS

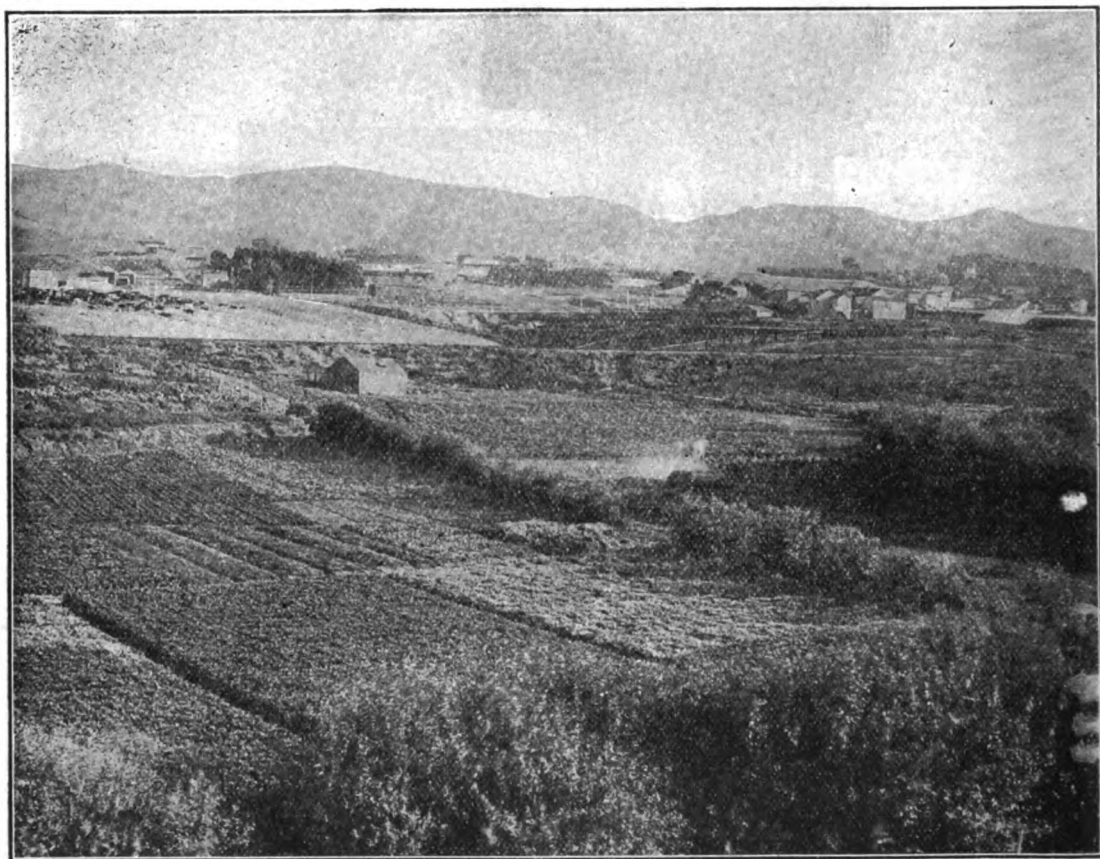
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Roos Brothers	Outfitters	Market and Stockton Sts.
Rosenberg Bros. & Co.	Dried Fruit	153 California Street
Rosenblatt Company, The	Wholesale Wines and Distillers	300 Second Street
Rosenfeld, John & Sons	Shipping and Commission	Merchants Exchange Bldg.
Rosenthal's, Inc.	Shoes	151 Post Street
Roth, Blum & Company	Provision Packers	50 California Street
Rothschild, John & Co.	Wholesale Grocers	11 Spear Street
Rothschild & Haydenfeldt, Inc.	Wholesale Jewelers	150 Post Street
Royal & Queen Ins. Co.	Iron and Metal Beds	122 Sansome Street
Rudgear-Merle Co.	Iron and Metal Beds	Hay, Stockton and N. Pt. Sta.
Rulofson, A. C.	Hardware	Monadnock Building
Russell Cream Co.	Hardware	Bush and Polk Streets
Russell & Irwin Mfg. Co.	Hardware	Commercial Building
Safety Rubber Heel Co.	Importers and Exporters of Rice	325 Bush Street
Saito, T. Co.	Manufacturers' Agents	1531 Buchanan Street
Saich, George C. & Co.	Wholesale Butchers	743 Mission Street
Salles & Chicorp.	Stationers	628 Montgomery Street
Sanborn, Vail & Co.	Stationers	847 Mission Street
Sanders & Co. Copper Wks.	Dredging and Contracting	Beale and Howard Streets
San Francisco Breweries	Dredging and Contracting	240 2d Street
San Francisco Bridge Co.	Dredging and Contracting	865 Monadnock Building
San Francisco News Co.	Dredging and Contracting	747 Howard Street
San Francisco Pioneer Var. Works.	Dredging and Contracting	816 Mission Street
San Francisco Savings Union	Dredging and Contracting	California and Montg. Sts.
San Francisco Stove Works	Dredging and Contracting	244 Townsend Street
Savings & Loan Society	Dredging and Contracting	Montgomery and Sutter Sts.
Saylor, Wm. H.	Dredging and Contracting	36 Commercial Street
Scharlach Hat Co.	Dredging and Contracting	777 Mission Street
Schilling, C. & Co.	Dredging and Contracting	20th and Minnesota Streets
Schindler, H. B.	Dredging and Contracting	172 Spear Street
Schmidt Lithograph Co.	Dredging and Contracting	2d and Bryant Streets
Schmitz Pharmacy, Val.	Dredging and Contracting	1845 Polk Street
Schussler, M. & Co.	Dredging and Contracting	Mutual Bank Building
Schussler Brothers	Dredging and Contracting	326 Grove Street
Schwabacher-Frey Stationery Co.	Dredging and Contracting	14 Sutter Street
Scott, George B.	Dredging and Contracting	Pine and Stockton Streets
Scott, Irving M., Estate of.	Dredging and Contracting	109 Postal Telegraph Bldg.
Scott, Magner & Miller, Inc.	Dredging and Contracting	40 California Street
Scribner's Sons, Chas.	Dredging and Contracting	717 Market Street
Security Savings Bank	Dredging and Contracting	316 Montgomery Street
Selby Smelting & Lead Co.	Dredging and Contracting	Merchants Exchange Bldg.
Seller Brothers & Co.	Dredging and Contracting	14 Spear Street
Shannon-Conmy Printing Co.	Dredging and Contracting	509 Clay Street
Sherman, Clay & Co.	Dredging and Contracting	Sutter and Kearny Streets
Ship Owners & Mer. T. B. Co.	Dredging and Contracting	Green Street Wharf
Shirpsier & Samuels	Dredging and Contracting	895 Market Street
Shoup, Paul	Dredging and Contracting	Flood Building
Shreve & Company	Dredging and Contracting	Shreve Building
Siebe Bros. & Plagemann	Dredging and Contracting	432 Battery Street
Sierra Art & Engraving Co.	Dredging and Contracting	343 Front Street
Sing Chong Company	Dredging and Contracting	601 Dupont Street
Sing Fat Co., Inc.	Dredging and Contracting	California St. and Grant Ave.
Singer Sewing Machine Co.	Dredging and Contracting	855 Pacific Building
Slack, C. A.	Dredging and Contracting	Haight and Stanyan
Slade, S. E. Lumber Co.	Dredging and Contracting	112 Market Street
Sloane, W. & J.	Dredging and Contracting	224 Sutter Street
Smith, B. J.	Dredging and Contracting	Alaska Commercial Bldg.
Smith Bros.	Dredging and Contracting	462 13th Street, Oakland
Solari's, Inc.	Dredging and Contracting	354 Geary Street
Somers & Company	Dredging and Contracting	37 California Street
Sonoma Express Company	Dredging and Contracting	Jackson Street Bulkhead
Sonoma Land Company	Dredging and Contracting	68 Post Street
Sorenson, J. A. & Co.	Dredging and Contracting	715 Market Street
South End Warehouse Co.	Dredging and Contracting	631 Second Street
Southern Pacific Milling Co.	Dredging and Contracting	Merchants Exchange Bldg.
South S. F. Packing & Provision Co.	Dredging and Contracting	407 Front Street
Spanish American Food Company	Dredging and Contracting	180 Erie Street
Spencer Plumbing Co.	Dredging and Contracting	231 Stevenson Street
Splivalo, C. R. & Co.	Dredging and Contracting	956 Bryant Street
Spreckels, J. D. & Bros.	Dredging and Contracting	90 Clay Street
Spreckels, Richard	Dredging and Contracting	Potrero
Springfield Fire & Marine Ins. Co.	Dredging and Contracting	306 Kohl Building
Standard Gas Engine Co.	Dredging and Contracting	10 California Street
Stauffer Chemical Co.	Dredging and Contracting	624 California Street
Steiger & Kerr Stove & Foundry Co.	Dredging and Contracting	18th and Folsom Streets
Sterling Furniture Co.	Dredging and Contracting	1049 Market Street
St. Francis Carriage Co.	Dredging and Contracting	Polk St. and Broadway
Stocker, W. W.	Dredging and Contracting	1280 Page Street
Stone, E. B. & A. L. Co.	Dredging and Contracting	401 Phelan Building
Stoney, Rouleau & Stoney	Dredging and Contracting	250 Montgomery Street
Straus, Louis	Dredging and Contracting	658 Mission Street
Strauss, Levi & Co.	Dredging and Contracting	Pine and Battery Streets
Sullivan, Sullivan & Roche	Dredging and Contracting	Humboldt Bank Building
Sumner, W. B. & Co.	Dredging and Contracting	220 Townsend Street
Sunset Grocery Co.	Dredging and Contracting	1105 Broadway, Oakland
Sussman, Wormser & Co.	Dredging and Contracting	134 Spear Street
Sutto & Company	Dredging and Contracting	412 Montgomery Street
Swan The Painter	Dredging and Contracting	Jessie, near 4th Street
Swiss-American Bank	Dredging and Contracting	622 Montgomery Street
Taffinder, W. G.	Dredging and Contracting	Merchants Exchange Bldg.
Taft & Penoyer	Dredging and Contracting	Clay & 14th Sts., Oakland
Taravellier & Cames	Dredging and Contracting	2787 Mission Street
Tay, Geo. H. Co.	Dredging and Contracting	617 Mission Street

Templeman, Henry	Lumber, Shipping and Commission	42 Market Street
Therein, J. H. & Co.	Manufacturers, Laundry Supplies	64 Clementina Street
Thieben, Jos. & Co.	Manufacturers' Agents	585 Mission Street
Thierbach, Chas. F. & Co.	Coffee, Tea and Spices	443 Battery Street
Thomas Parisian Dyeing & Cleaning		27 10th Street
Thompson, F. W.	General Agent	872 Market Street
Thompson Estate, R. R.		Merchants Exchange Bldg.
Thompson-Kelly Co.		1727 O'Farrell Street
Titus, Louis	Attorney	Balboa Building
Todd & Peters	Housesmiths	322 Main Street
Tozer Company, The	Interior Decorators	1525 Pine Street
Troy Laundry Machinery Co.		581 Mission Street
Truman, I. J.	Real Estate	703 Humboldt Bank Bldg.
Tubbs Cordage Company		Kohl Building
Typewritorium	Typewriters	225 Montgomery Street
Uhl Bros., Inc.	Wall Paper	717 Market Street
Union Fish Co.		Foot of Spear Street
Union Ice Co.		354 Pine Street
Union Iron Works		Potrero
Union Lithograph Co.		741 Harrison Street
Union Lumber Co.		Crocker Building
Union Oil Co.		Mills Building
Union Pacific R. R. Co.		42 Powell Street
Union Transfer Co.		Ferry Building
Upham, Isaac Co.	Stationers, Bookbinders	104 Battery Street
Uri, F. & Co.	Wholesale Butchers	1847 O'Farrell Street
Valley Cafe		105 Market Street
Van Arsdale Harris Lumber Co.		5th and Brannan Streets
Van Bergen, N. & Co.	Wholesale Liquors	338 Washington Street
von Goltzheim, Morritz Stach	Steelite Safety Powder Co.	First National Bank Bldg.
von Schroeder, J. H.		743 Capp Street
Waffle Kitchen, The		723 Market Street
Wakelee Drug Co.		58 Market Street
Walter, D. N. & E. & Co.	Carpets	O'Farrell and Stockton Sts.
Ward, E. G.	Oyster Depot	California and Polk Streets
Ward, W. H.		1723 San Pablo Ave. Oakland
Waterhouse & Price Co.	Building Materials	59 Third Street
Waters, R. J. & Co.	Commercial Photographs	717 Market Street
Weber, C. F. & Co.	Church, School and Theater Furniture	365 Market Street
Weinstock, Lubin & Co.	Dry and Fancy Goods	Post and Fillmore Streets
Wells Fargo Express Co.		2d and Mission Streets
Welsbach Company	Gas Mantels	351 McAllister Street
Wertheimer & Pearlstein	Juvenile Clothing	Grant Ave. and Union Sqr.
West Side Lumber Co.		Flood Building
Western Builders Supply Co.		680 Mission St.
Western Creameries Co.		53 California Street
Western Engineering & Constr. Co.		Monadnock Building
Western Fish Co.		517 Washington Street
Western Foundry		Main and Harrison Streets
Western Laundry Machinery Co.		58 Fremont Street
Western Meat Co.		6th and Townsend Streets
Western Photo Supply Co.		82 Third Street
Western Sugar Refining Co.		90 Clay Street
Western Transfer & Storage Co.		217 Front Street
Western Woodworking Co.		666 Guerrero Street
Westinghouse Electric & Mfg. Co.		165 Second Street
Weston Basket & Barrel Co.		Third and Berry Streets
Wetmore, Bowen & Co.	Wines	42 Davis Street
White Brothers	Hardwood Lumber	Spear and Howard Streets
White, J. E.	Attorney	Monadnock Building
White Lumber Co., L. E.		Balboa Building
White Sewing Machine Co.		612 Van Ness Avenue
White Star Laundry Co.		385 8th Street
Wichman, Lutgen & Co.	Wholesale Liquors	431 Clay Street
Williams & Surryhne	Real Estate	128 Sutter Street
Williams, Dimond & Co.	Shipping and Commission	310 Sansome Street
Williamson, W. F.	Attorney	Crocker Building
Williar, H. R.	Paper	Chronicle Building
Wilson Brothers & Co.	Lumber	324 Berry Street
Winslow, C. R. & Co.	Agents Rubber Shoes	658 Howard Street
Winton Motor Carriage Co.		Grove St. and Van Ness Ave.
Witter Medical Springs		Westbank Building
Werner Brothers		5 Fourth Street
Wolf, Edward Co.	Wholesale Cigars	161 California Street
Wolf, Wm. & Co.	Importers	52 Beale Street
Wolf & Sons		Drum and Washington Sts.
Worden, C. E.		First National Bank Bldg.
Yates & Co.	Paint Manufacturers	762 Folsom Street
Yawman & Erbe Mfg. Co.	Filing Cabinets	716 Mission Street
Young, C. D.		Los Angeles
Zelinsky, D.	Painter and Decorator	338 Larkin Street
Zellerbach Paper Co.		Battery and Jackson Streets



MT. TAMALPAIS AND VICINITY.



INTENSIVE FARMING.

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FERRY BUILDING

CALIFORNIA DEVELOPMENT BOARD

A CONSOLIDATION OF

THE CALIFORNIA STATE BOARD OF TRADE

Organized August 2, 1887

Incorporated February 20, 1890

THE MANUFACTURERS AND PRODUCERS ASSOCIATION OF CALIFORNIA

Organized March, 1895

AND THE

CALIFORNIA PROMOTION COMMITTEE

Organized April, 1902



Econ. 6215.7
Box 215

CALIFORNIA

RESOURCES AND POSSIBILITIES



ANNUAL REPORT
CALIFORNIA DEVELOPMENT BOARD
SAN FRANCISCO, CALIFORNIA

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1911

Panama-Pacific International Exposition, 1915

ON the day the President of the United States authorizes the first ship to pass through the completed canal across the Isthmus of Panama, the City of San Francisco, the great seaport of Pacific America, will throw wide open the gates of an International Exposition, and welcome the Nations of earth to join in the celebration in honor of the greatest triumph of modern days.

The people of San Francisco pledged \$7,500,000 by popular subscription, and \$5,000,000 Exposition Bonds were voted by the municipality of San Francisco, and \$5,000,000 were voted by the State, making a total of \$17,500,000 as a start for a firm foundation for the World's Exposition.

THE FINANCIAL QUESTION has been answered by San Francisco, and she has much to offer besides the money.

SAN FRANCISCO presents to the world the greatest evidence of human energy ever seen; she presents the epitome of American spirit; she presents the most modern city of the world, built from ashes in the short space of four years; she presents in herself an exposition that is unequalled.

SAN FRANCISCO stands at the gateway of the commerce for which the commercial world is struggling, and at this gateway she holds the finest harbor in the world, in itself a playground where all the nations may unite in a grand pageant and naval display in honor of the opening of a new world's highway.

SAN FRANCISCO presents an unrivalled climate, where stress of weather is never known, and where through the entire duration of the Exposition, people will enjoy comforts unknown in any other city.

**CALIFORNIA INVITES YOU TO THE
EXPOSITION CITY, 1915**

CALIFORNIA

RESOURCES AND POSSIBILITIES

TWENTY-FIRST ANNUAL REPORT

OF THE

California Development Board

FOR THE YEAR 1910

Submitted as of March, 1911

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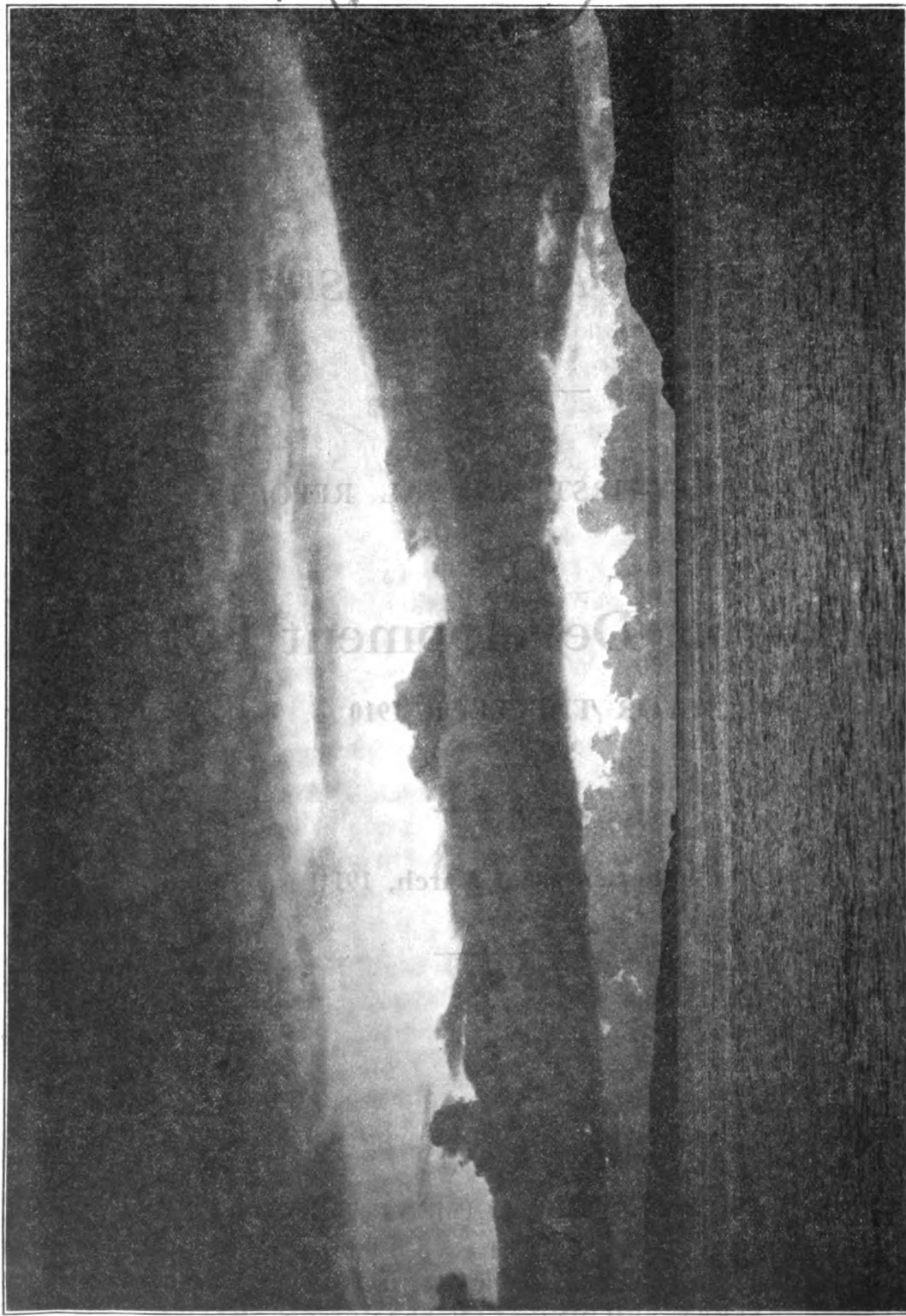
PUBLISHED BY THE

CALIFORNIA DEVELOPMENT BOARD

**OFFICE AND EXHIBITION HALL
FERRY BUILDING, SAN FRANCISCO
UPPER FLOOR**

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HARVARD UNIVERSITY
AUG 7 1911



THE GOLDEN GATE. FORT SCOTT ON THE LEFT.



STATE CAPITOL, SACRAMENTO.

CALIFORNIA DEVELOPMENT BOARD



THE FERRY BUILDING, SAN FRANCISCO.

The California Development Board closes its second year with a splendid record of things accomplished.

Never before have the resources of California been so well and so thoroughly advertised. Its efforts have not alone been confined to our own country, but have been world-wide. The result is that California to-day is receiving more attention from those who are seeking homes and investments than any other section of the United States or perhaps of the world.

The Pacific Slope needs population—a population that will settle in our fertile valleys and till the soil. We want to select the best people from all over the world and build up a citizenship that for intelligence, industry and moral worth cannot be excelled anywhere. The opportunity to do so is now at hand. The completion of the canal will bring us closer in touch with Europe commercially and in every other way. The International Exposition to be held in 1915 will invite to our State people from every nation.

Realizing the great advantages to be derived from these two great world events, it is the purpose of the California Development Board to have its agents in every country in Europe to advertise our State and the exposition and to encourage the right kind of people to immigrate to our shores. It will be our aim to reach the very best people, and particularly those who will settle upon our lands.

In carrying out this important work we will need, of course, the endorsement and co-operation of every civic body in the State, and also the necessary financial support of our citizens.

We hope for great results and we expect that our State will profit by our efforts. Our campaign will be educational, and we shall truthfully present the very best our State offers.

J. N. GILLETT.

President California Development Board.

TWENTY-FIRST ANNUAL REPORT

OF THE

CALIFORNIA DEVELOPMENT BOARD

To the Members of the Board:

The California Development Board is entering upon the second year of its history, though it runs back in long and honorable service through many years in the life of the constituent organizations of which it is the amalgamation. The wisdom of uniting all the State promotion organizations in one body has been fully justified in the work of the past year. Complete harmony and united support has been the happy result and the entire energy of the one State central organization has been utilized in its proper functions and work. An organization of State-wide character must of necessity command the attention and respect of all other organizations and forces in the State, and must be equipped to do the largest and most general work of its character.

As a direct result of the amalgamation the work of the Development Board has become greatly broadened and made more comprehensive. As its name indicates, it is charged with the responsibility of the actual development of a great empire. It gathers up with painstaking accuracy the actual facts of the resources and attractions of our State and seeks to inform the world through every conceivable channel of publicity what the State has to offer to the homeseeker, tourist, the manufacturer and investor.

Work of the California Development Board. In order to serve with the greatest efficiency the proper objects and functions of the Board, the working force was organized into four departments. A review of the work of these departments will perhaps indicate in the best way what is conceived to be the functions of our organization. These departments are known as the Publicity Bureau, the Exhibit and Information Bureau, the Statistical Bureau, and the Organization Bureau.

Publicity Bureau. The Publicity work of the Development Board has greatly exceeded any work ever attempted by a like organization in the history of our State. The Board was directly responsible for California representation at practically every convention, congress, or land show of National or Western character held during the year throughout the country. Vast quantities of literature were distributed at all these gatherings and competent lecturers presented the attractions of the State to hundreds of thousands of people.

Your Manager made an extensive Eastern trip in May, 1910, visiting important Eastern cities and made affiliations and started centers of influence on which to base a National publicity work. This visit was followed in August by a representative at the Knights Templar Conclave in Chicago. On this occasion our representative acted as press agent for the California delegation, maintained California headquarters at the Congress Hotel, delivered lectures to many thousands of people, and secured wide and favorable mention of our resources. In September the Board had a representative and State information booth at the Ohio Valley Exposition at Cincinnati. On this occasion 120,000 people attended the lectures on California. In addition to this, your Manager went East and conducted "California Day," which inaugurated this unique feature at such affairs. Wide publicity was obtained in the papers of that section, and an address on California was delivered to a single audience of 4,000. Seven hundred and fifty thousand people visited our information booth and large quantities of literature were distributed.

In November the Board maintained information booth and lectures at the United States Land and Irrigation Exposition at Chicago, organized the California

exhibits and conducted "California Day." Several pages of display advertising were carried in the Chicago papers and 20,000 people were entertained by the Board, and products of California were distributed to all who came. Your Manager personally addressed successive audiences of 1500 during the entire day.

The Board also maintained an exhibit and lecture and also the characteristic "California Day" at the Western Land Products Exhibit held in Omaha in January. Thousands of loaves of raisin bread were distributed through the courtesy of the Fresno Chamber of Commerce, as a result of which Omaha bakeries are now supplying the public with large quantities of this California product.

The Board was also directly represented at the Grand Army Encampment at Atlantic City in September; at the Trans-Mississippi Commercial Congress at San Antonio, Texas; at the Gulf-to-Lakes Deep Waterway Congress at St. Louis, Mo.; at the National Irrigation Congress at Pueblo, Colo.; at the Pan-Pacific Travel Congress at Honolulu, T. H.; at the Rivers and Harbors Congress at Washington, D. C.; at the Pan-American Commercial Conference at Washington, D. C.; at the National Council of Grain Exchanges at Chicago, and at the Corn Exposition at Columbus, O. At all of these events the Development Board was not merely represented by Californians who happened to be in attendance, but sent its own official representatives and lecturers, who distributed quantities of literature and represented the interests of our State. Your Manager conservatively estimates that through the direct work of its Lecture Bureau 400,000 people heard our lecture on California, and that as a result of the above activities some 2,000,000 people came within the sphere of our influence. In addition, the California Development Board has equipped ten independent lecturers in the United States and two in England with slides on California, which are in constant use.

In California itself, the Development Board has been represented at all important gatherings, and has maintained lectures or sent representatives to such occasions as the Bankers' Convention in Los Angeles; the Pacific Congress at San Francisco, the Industrial and Pure Food Show at San Jose, the Watsonville Apple Annual, the Citrus Fair at Visalia, the Citrus Fair at Cloverdale, the Navy League Convention at Los Angeles, the State Fair at Sacramento, the Fruit Growers' Convention at Stockton, the Citrus Fair at Sacramento, the Pacific Land & Products Exposition at Los Angeles, and the First Annual Industrial and Food Exposition at Petaluma. At most of these places lectures were given and an Information Booth on California was maintained. The object of this publicity in California was threefold: First, to acquaint the people of our own State with its advantages; second, to induce people in California to communicate with the Development Board for the supplying of information to Eastern friends; and, third, to acquaint the people of the State with the exhibit rooms maintained by the Board at the Ferry Building in San Francisco.

A campaign of advertising has been carried on during the year in the Middle West. For a limited period all the agricultural periodicals carried our advertisement. Extensive advertisements were published in the Chicago papers and numerous other advertisements were inserted in special journals.

A great volume of publicity, however, has come from articles on California inspired or written by this organization, which cover newspapers and magazines throughout the country. These articles are too numerous to be listed in this report, but it can be safely said that the combined circulation of the various papers publishing our articles would be many million.

This Board has also furnished photographs and cuts about California for all sorts of organizations and newspapers.

As an indication of how far-reaching this work of publicity extends, your Manager furnished one interview on California while in St. Louis which was reproduced in 400 Middle West newspapers.

The Board has encouraged publicity in local San Francisco papers and the papers throughout the State without reference to the particular work of our Board. It is gratifying to note that the San Francisco daily papers are giving

more space at the present time to exploitation and development matters than any other portion of the State.

The Board issues a bulletin of conditions on California month by month. Three hundred thousand of these bulletins have been issued during the year and are mailed regularly to similar organizations, newspapers, publicity officials, individual members, trade organizations throughout the world, consuls of the United States in foreign countries and libraries. A tremendous volume of publicity flows from this source alone.

The Board has just sent a special representative and lecturer to the International Exposition at Turin, Italy, to remain there for six months. This representative is equipped with quantities of California literature, slides, and a special pamphlet in Italian printed by this Board. A complete exhibit of California products was also sent. It will thus be seen that the publicity work of the Development Board is covering in a notable way the entire United States and a portion of Europe.

All of this publicity and the entire equipment of the Development Board, both in San Francisco and abroad, was used for the benefit of the Panama-Pacific International Exposition. In the five Eastern trips made by your Manager and the numerous trips made by lecturers of the Board, and the representation maintained at various Congresses and Conventions, our entire strength was given to aid the securing of this world's exposition to California. This Board recognizes the coming exposition as the greatest force for the immediate development of our State and is co-operating in every possible way with its exploitation.

Exhibit and Information Bureau. The Board maintains in the Ferry Building at San Francisco the greatest exhibit of State's products that has ever been maintained by any State in the Union. This exhibit has been completely refurbished and rehabilitated during the year and presents a most attractive and pleasing appearance. Over 250,000 people have visited this exhibit during the year and 30,000 have attended daily lectures which are maintained in the premises. A public Information Desk has been installed in the main body of the hall and visitors are courteously met and furnished with literature and information on all portions of the State. In addition to the products, our Board is equipped with large relief maps of the State with detailed county maps in convenient racks. Sixty thousand State maps were distributed in connection with our annual report, and 542,000 pieces of printed matter. A determined effort is being made to advertise and popularize this splendid exhibit. Beautiful posters are displayed in railway stations and in public places calling attention to this free exhibit in connection with the exhibit of the State Mining Bureau on the same floor. The daily papers of San Francisco carry an advertisement calling attention to our exhibit. Invitations are placed in room boxes of visitors in hotels in San Francisco to inspect our exhibit and an arrangement is made with the sight-seeing cars to terminate their trips with a visit to the exhibit.

A larger amount of fruit and finer specimens have been processed on the premises than ever before and has taxed the utmost facilities of this department. Splendid new stands have been erected for ten counties, and four new counties have been affiliated. A complete exhibit to fill the two cars of the North of Bay Counties Association was processed on the premises and shipped East, where they are being constantly exhibited to over 5,000 people weekly.

No charge is made for admission to the exhibit hall or for any publications or literature furnished by the Board. It is the policy of the Board to develop competent lecturers, splendid exhibits and lecture equipment in this department and to use them in the wider publicity work throughout the world.

Statistical Bureau. The least spectacular but not the least important feature of our work is our Bureau of Statistics. The present annual report is the fruit of a whole year's work of this department. This department is constantly engaged in collecting all accurate information in regard to the resources of our State and is in immediate touch with conditions and changes in every direction. It acts as a clearing house for all statistical bodies in the State and is the most completely equip-

ped machine for this purpose in California. This department is called upon by banks, commercial agencies, railroads, newspapers, periodicals, and individuals for statistical matter, estimates of values and production of crops, and a range of information that is wide, varied and unexpected. Even a casual reading of this report will show how extensive and important are the activities of this department.

Bureau of Organization. This Bureau has been under the personal direction of the Manager and includes the affiliation of the California Development Board with all similar organizations in the State, co-operation with all publicity and development activities, and the whole work of concentrating and developing the energies of all public bodies in the State. The Board encourages and personally supervises the formation of Chambers of Commerce in every city and hamlet of the State. It encourages the formation of district organizations; it encourages and supervises the county organizations in exhibit and publicity work. It works in cordial harmony and sympathy with colonization and publicity departments of railroads and with all advertising agencies and commercial firms where the propriety and policy of the Board permits such co-operation. There is being spent in California approximately a million and a half dollars per year on general California publicity, entirely apart from real estate and direct sale of any product. The Development Board is in a peculiarly favorable position to concentrate and utilize this publicity to the greatest advantage.

The Board held two notable meetings during the year, known as the Counties Committee meeting, at which representatives from all over the State met in Grass Valley in June, 1910, and in Oakland in January, 1911. The theme of the meeting in Oakland was "Methods of California Development" and experts along various lines elaborated on the various forces which are being used to build up this State, with the relations of civic and commercial organizations to such development. The full account of these meetings is contained in printed bulletins which are of great value.

The Department of Organization has arranged for a permanent and official affiliation of various organizations throughout the State. It is the purpose of this permanent organization to raise more directly the efficiency of local bodies and form plans of mutual co-operation and effectiveness in the common work. The development of this permanent affiliation is proceeding conservatively but surely and will form the basis for greatly increased work in the coming year.

General Work. The office force of the California Development Board is composed of trained and efficient experts. A vast amount of correspondence on State matters is attended to. During the year 60,000 letters have been written. The work of the office force is become highly specialized for the carrying on of our peculiar work. The general organization has been in vital touch with all movements concerning general development. A careful file is kept of articles of collateral interest in the press of the State. A large and complete library is maintained on the premises. The Executive Committee has dealt with public problems and has given or withheld its endorsement to many activities initiated elsewhere, but which affect the proper sphere of our influence. Legislation tending to the betterment of conditions or the general development of the State has received very careful attention. Attention has been paid to the entertainment of visitors during the year, particularly excursionists from the North and other points.

The financial condition of the Board is good and the work has been carried on well within the amount of money at our disposal. There should be, however, an increase of 50 to 100 per cent in the income of the Board in order to meet the tremendous possibilities of the immediate future.

GROWTH AND DEVELOPMENT OF THE STATE.

The returns of the thirteenth census, while most gratifying to everyone interested in California, were not surprising to those who studied the steady movement of homeseekers toward the West and into the State.

In 1900, twenty States ranked ahead of California in population. In 1910, but eleven stood before her. In the ten-year period she had outstripped nine of them, taking twelfth place.

The increase during the last decade has not been gained under the impulsion of a desire to participate in the golden harvest of rich placers, that caused the rush of earlier years from all over the world, but has been steady, substantial and permanent homeseekers desiring to live under the beneficent conditions to be found in California.

This increase may be better realized by a comparison with that of previous decades.

Years.	Population.	Years.	Population.
1850	92,597	1890	1,208,130
1860	379,994	1900	1,485,053
1870	560,247	1910	2,377,549
1880	864,694		

The rate of increase from 1900 to 1910 was 60.1, larger than that of any state outnumbering her in population, while the actual increase, 892,496, was greater than any with a larger percentage of increase.

Density of Population.

The increase in the density of population per square mile in the same periods more clearly illustrates the wonderful growth of the population of California. It is as follows:

Years.	Density.	Years.	Density.
1850	0.6 per square mile	1890	7.8 per square mile
1860	2.4 per square mile	1900	9.5 per square mile
1870	3.6 per square mile	1910	15.2 per square mile
1880	5.5 per square mile		

There is a density of but 15.2 persons to the square mile.

That California is able to support a population far greater than she now has, is evidenced by the appended table, giving the average number of inhabitants per square mile in ten States and the number California would have with the same density of population.

State.	Average Number People to Square Mile.	Population California with Same Density.
Rhode Island	508.5	79,350,000
Massachusetts	418.8	65,324,400
New Jersey	337.7	52,673,500
Connecticut	221.3	34,527,750
New York	191.2	29,823,350
Pennsylvania	171.0	26,872,600
Maryland	130.3	20,324,200
Ohio	117.0	18,267,650
Delaware	103.0	16,096,000
Illinois	100.7	15,707,200

The San Joaquin Valley with 7,000,000 acres, and the Sacramento Valley with 4,000,000 acres of rich agricultural land, can give to 550,000 families a farm of 20 acres each, ample for their sustenance, to say nothing of the Santa Clara, Napa, Sonoma and other rich valleys throughout the State.

The actual increase and the percentage of increase during the decade by counties is shown by the following:

CALIFORNIA DEVELOPMENT BOARD.

LIST OF COUNTIES AND POPULATION IN 1910 AND 1900, WITH PERCENTAGE OF INCREASE OR DECREASE—COUNTIES' PROGRESS AS TOLD BY THE CENSUS.

Counties.	1910.	1900.	Percent of Increase, 1900-1910.
Alameda	246,131	130,197	89.0
Alpine	309	509	—39.2
Amador	9,086	11,116	—18.2
Butte	27,301	17,117	59.4
Calaveras	9,171	11,200	—18.1
Colusa	7,732	7,364	4.7
Contra Costa	31,674	18,046	75.4
Del Norte	2,417	2,408	0.3
El Dorado	7,492	8,986	—16.5
Fresno	75,657	37,862	99.8
Glenn	7,172	5,150	39.2
Humboldt	33,857	27,104	24.9
Imperial	13,591	.....	.....
Inyo	6,974	4,377	59.4
Kern	37,715	16,480	128.0
Kings	16,230	9,871	64.4
Lake	5,526	6,017	—8.1
Lassen	4,802	4,511	8.6
Los Angeles	504,131	170,296	196.0
Madera	8,368	6,364	31.3
Marin	25,114	15,702	59.0
Mariposa	3,956	4,720	—16.2
Mendocino	23,929	20,465	17.4
Merced	15,148	9,215	64.4
Modoc	6,191	5,076	21.9
Mono	2,843	2,167	31.6
Monterey	24,146	19,380	24.6
Napa	19,800	16,451	20.6
Nevada	14,955	17,789	—15.9
Orange	34,436	19,696	74.8
Placer	18,237	15,786	15.1
Plumas	5,259	4,657	12.9
Riverside	34,696	17,897	93.9
Sacramento	67,806	45,915	47.6
San Benito	8,041	6,633	21.2
San Bernardino	56,706	27,929	103.0
San Diego	61,665	35,090	75.8
San Francisco	416,912	343,782	21.6
San Joaquin	50,731	35,452	43.1
San Luis Obispo	19,383	16,637	16.5
San Mateo	26,585	12,094	119.8
Santa Barbara	27,738	18,934	45.4
Santa Clara	83,539	60,216	38.7
Santa Cruz	26,140	21,512	21.0
Shasta	18,920	17,318	0.9
Sierra	4,098	4,017	0.2
Siskiyou	18,800	16,962	10.9
Solano	27,559	24,143	14.5
Sonoma	48,394	38,480	25.8
Stanislaus	22,522	9,550	136.7
Sutter	6,328	5,886	7.5
Tehama	11,401	10,996	3.7
Trinity	3,301	4,383	—24.7
Tulare	35,440	18,375	93.4
Tuolumne	9,979	11,166	—10.6
Ventura	18,347	14,367	27.7
Yolo	15,926	13,618	16.9
Yuba	10,042	8,620	16.5
California	2,377,549	1,485,053	60.1

The following tables showing the Counties of the four leading sections of the State give some instructive figures for comparison of the growth of each section:—

DISTRIBUTION OF POPULATION.

11

BAY COUNTIES.

	Population.		Increase.		Square Miles.	Population Per Square Mile.		
	1910.	1900.	Amount.	Per Cent		1910.	1900.	Increase
San Francisco.....	416,912	342,782	74,130	21.6	47	8870.0	7293.2	1576.8
Alameda	246,131	130,197	116,061	89.0	764	321.9	170.4	151.5
Contra Costa	31,674	18,046	13,682	75.4	728	43.5	24.8	18.7
Solano	27,559	24,143	3,416	30.6	900	30.6	26.8	3.8
Napa	19,800	16,451	3,349	20.6	780	25.4	21.1	4.1
Sonoma	48,394	38,480	9,914	25.8	1,620	29.9	23.8	6.1
Marin	25,114	15,702	9,412	59.0	549	45.8	30.4	15.4
San Mateo	26,585	12,094	14,491	119.8	434	61.3	27.9	33.4
Santa Clara	83,539	60,261	23,278	38.7	1,286	64.9	46.8	18.1
	925,708	658,156	267,552	40.6	7,108	130.2	92.6	27.6

SOUTH OF TEHACHAPI.

	Population.		Increase.		Square Miles.	Population Per Square Mile.		
	1910.	1900.	Amount	Per Cent		1910.	1900.	Increase
Los Angeles.....	504,131	170,289	233,833	196.0	4,202	119.9	40.5	79.4
Santa Barbara.....	27,738	18,934	8,804	45.4	2,636	10.5	7.2	3.3
Ventura	18,347	16,697	3,980	27.7	1,721	10.6	8.3	2.5
Orange	34,436	19,696	14,740	74.8	750	45.9	26.2	19.7
San Diego.....	61,665	35,090	40,116	114.4	4,207	14.6	...	4.7
Imperial	13,591	...	...	...	...	...	4.1	...
San Bernardino.....	56,706	27,927	28,779	103.0	4,316	3.1	...	...
Riverside	34,696	17,897	16,799	93.9	19,947	2.8	1.4	1.4
	751,310	304,209	447,101	146.9	7,323	4.7	2.4	2.3
					45,102	16.6	6.7	9.9

SACRAMENTO VALLEY.

	Population.		Increase.		Square Miles.	Population Per Square Mile.		
	1910.	1900.	Amount	Per Cent		1910.	1900.	Increase
Sacramento	67,806	45,912	21,891	47.6	1,000	67.8	45.9	21.9
Yolo	15,926	13,618	2,308	16.9	996	16.0	13.7	2.3
Sutter	6,328	5,866	442	7.5	622	10.1	9.4	.7
Colusa	7,732	7,364	368	4.7	1,088	7.1	6.7	.4
Glenn	7,172	5,150	2,022	39.2	1,270	5.6	4.1	1.5
Tehama	11,401	10,996	405	3.7	3,008	3.7	3.6	.1
Butte	27,301	17,117	10,184	59.4	1,660	16.4	10.3	6.1
Yuba	10,042	8,620	1,422	16.5	636	15.8	13.4	2.4
	153,708	114,656	39,042	34.6	10,280	14.9	11.1	3.8

SAN JOAQUIN VALLEY.

	Population.		Increase.		Square Miles.	Population Per Square Mile.		
	1910.	1900.	Amount	Per Cent		1910.	1900.	Increase
San Joaquin.....	50,731	35,462	15,269	43.1	1,396	36.4	26.1	10.3
Stanislaus	22,522	9,550	12,972	136.7	1,456	15.5	6.5	9.0
Merced	15,148	9,215	5,933	64.4	1,932	7.8	4.8	3.0
Madera	8,368	6,364	2,004	31.4	2,062	4.1	3.1	1.0
Fresno	75,657	37,862	37,795	99.8	6,152	12.3	5.8	6.5
Kings	16,230	9,871	6,359	64.4	1,176	13.7	8.4	5.3
Kern	37,715	16,480	21,235	128.8	8,050	4.7	2.0	2.7
Tulare	35,440	18,375	17,065	93.4	4,925	7.2	3.7	4.4
	261,811	143,179	118,632	80.2	27,176	9.7	5.3	4.4

SUMMARY OF THE STATE.

	Population.		Increase.		Square Miles.	Population Per Square Mile.		
	1910.	1900.	Amount.	Per Cent		1910.	1900.	Increase
Bay Counties.....	925,708	658,156	267,552	40.6	7,108	130.2	92.6	37.6
South of Tehachapi.	751,310	304,209	447,101	146.9	45,102	16.6	6.7	9.9
Sacramento Valley..	153,708	114,656	39,052	34.6	10,280	14.9	11.1	3.8
San Joaquin Valley..	261,811	143,179	118,632	80.2	27,176	9.7	5.3	4.4
Rest of the State....	285,012	264,853	20,159	7.6	66,506	4.2	3.8	.4
	2,377,549	1,485,053	892,496	60.1	156,172	15.2	9.5	5.7

This segregation shows that the greatest gain per square mile has been in the counties about San Francisco Bay, while the greatest aggregate gain and the greatest rate of increase has been south of the Tehachapi.

Of the two great interior valleys, the San Joaquin Valley has made the greatest aggregate gain, 118,632, and the greatest gain per cent, 80.2; while the Sacramento Valley made an aggregate gain of 39,042, and a gain per cent of 34.6.

The remaining counties of the State, twenty-five in number, show an aggregate gain of 20,159, and a net gain of 7.6 per cent.

Irrigation, the development of agricultural lands, and the development of bountiful oil fields of the State, have been the main factors in attracting homeseekers and investors.

POPULATION OF CITIES OVER 5,000.

	1910	1900
Alameda	23,383	16,464
Alhambra	5,021	.....
Bakersfield	12,727	4,836
Berkeley	40,434	13,214
Eureka	11,845	7,327
Fresno	24,892	12,470
Long Beach	17,809	2,252
Los Angeles	319,198	102,479
Marysville	5,430	3,497
Napa	5,791	4,086
Oakland	150,174	66,960
Pasadena	30,291	9,117
Petaluma	5,880	3,871
Pomona	10,207	5,526
Redlands	10,449	4,797
Richmond	6,802	.....
Riverside	15,212	7,973
Sacramento	44,696	29,282
San Bernardino	12,779	6,150
San Diego	39,578	17,700
San Francisco	416,912	342,782
San Jose	28,946	21,500
San Luis Obispo	5,157	3,021
San Rafael	5,934	3,879
Santa Ana	8,429	4,933
Santa Barbara	11,659	6,587
Santa Cruz	11,146	5,659
Santa Monica	7,847	3,057
Santa Rosa	7,817	6,673
Stockton	23,253	17,506
Vallejo	11,340	7,965
Total	1,314,037	739,513

Being a gain for the thirty-one cities having over 5,000, of 574,524, out of a total gain for the whole State of 892,596, leaving 318,072 for the rural districts. In Los Angeles and Alameda Counties, which had the greatest increase of population, being 233,833 and 116,061 respectively, the three cities of Los Angeles, Pasadena and Long Beach, in Los Angeles County, had an aggregate increase of 253,450, while Oakland, Berkeley and Alameda, in Alameda County, had an aggregate increase of 117,253.

THE GAIN ON THE PACIFIC SLOPE.

While the gain in population for the whole of the Continental United States was 15,977,691, an increase of 21 per cent, the eleven States of the Pacific Slope, as given in the table below, show an aggregate increase of 2,734,567, an increase of 66.8 per cent.

The combined area is 1,175,742 square miles, which makes an average population per square mile of 5.8 per cent, while the average population per square mile for the Continental United States is 30.9 persons.

PACIFIC SLOPE STATES.

	Population.		Increase.		Square Miles.	Population Per Square Mile.		
	1910.	1900.	Amount	Per Cent.		1910.	1900.	Increase
Montana	376,053	243,329	132,724	54.5	145,310	2.6	1.7	.9
Wyoming	145,965	92,531	53,434	56.8	97,575	1.5	.9	.6
Colorado	799,024	539,700	259,324	48	103,645	7.5	5.2	2.3
New Mexico	327,396	195,300	132,086	67.6	122,460	2.7	1.6	1.1
Arizona	204,354	122,931	81,423	66.2	112,920	1.8	1.1	.7
Utah	373,351	276,749	96,602	34.9	82,190	4.5	3.4	1.1
Nevada	81,875	42,335	39,530	93.4	109,740	.8	.4	.4
Idaho	325,594	161,772	163,822	101.3	84,290	3.9	1.9	2
Washington	1,141,990	518,103	623,887	120.4	66,880	17	7.7	9.3
Oregon	672,765	413,536	259,229	62.7	94,560	7.1	4.4	2.7
California	2,377,549	1,485,053	892,496	60.1	156,172	15.2	9.5	2.7
	6,825,916	4,091,349	2,734,567	66.8	1,175,742	5.8	3.4	2.4

Expansion of Agricultural Industries. The development of the agricultural resources of the State is exhibited in the following tables, comparing the acreage sown to certain crops in 1862 with those of 1910.

	1862. U. S. Com. Agr. Report.	1910. State Board of Equalization Rep.
	Acrea.	Acrea.
Indian Corn	17,339	56,140
Wheat	361,351	1,107,934
Rye	1,415	20,220
Oats	36,607	282,517
Barley	223,217	1,871,356
Hay	250,464	1,407,690
Potatoes	8,624	86,938
Totals	914,768	4,832,995
Add acreage of following, not mentioned in report of 1862:		
Hops		8,225
Celery		4,335
Beans		147,933
Standing Alfalfa		374,000
Cotton		12,000
Sugar Beets		72,000
Total		5,454,288

Besides this increase in acreage of the staple crops, California had, according to the report of the State Board of Equalization, vines and fruit trees as follows, bearing and not bearing, in 1910:

VINEYARDS.

	acres.
Table Grapes	53,729
Raisin Grapes	128,217
Wine Grapes	160,573

ORCHARDS.

Deciduous Fruits—	No of Trees.	Citrus Fruits—	No. of Trees.
Apple	2,143,815	Orange	10,803,221
Apricot	2,593,884	Lemon	1,810,616
Cherry	601,520	Pomelo	18,886
Fig	549,875	Lime	1,716
Nectarine	63,773		
Olive	1,190,452	Total	12,634,439
Peach	10,922,994		
Pear	1,499,932	Nuts—	
Plum	1,059,453	Almond	1,204,382
Prune	8,998,831	Walnut	891,147
Total	19,624,529	Total	2,095,529

CALIFORNIA DEVELOPMENT BOARD.

Deciduous	19,624,529
Citrus	12,634,439
Nuts	2,095,529
Grand total	34,354,497

GROWTH IN ASSESSED VALUES.

	1850	1862	1910
Assessed value of all property in State....	\$57,670,689	\$160,369,071	\$2,373,897,092

To show the changes in farming districts in recent years, which changes are still going on, the following exhibit is submitted:

This is made up from U. S. Census Reports and shows the development in agricultural lines since California became a State.

Size.	Number of Farms.		Year.	Population of State.	No. Farms
	1890.	1900.			
Under 10 acres	2,827	6,846	1850	92,597	872
10 and under 20 ...	4,010	8,236	1860	379,994	18,716
20 and under 50 ...	7,691	13,110	1870	560,247	23,724
50 and under 100..	5,196	8,067	1880	864,694	35,934
100 and under 175..	....	13,196	1890	1,208,130	52,814
175 and under 500..	24,534	13,005	1900	1,485,053	72,542
500 and under 1000.	4,367	5,329	1910	2,377,549	Est. 112,000
1000 and over	3,672	4,753			
Average size	405	397.4			

	1850.	1900	Increased.
Number of Farms	872	72,542	83 fold
Number of acres in Farm Lands	3,894,000	28,829,000	8 fold
Number of acres in Farm Lands (imp.)	82,400	11,919,000	393 fold

Value of all Farm Property	1850.	1900.
	\$7,399,000	\$1,163,000,000

Of the 72,542 farms in 1900, there were operated by

	Per Cent of Total		Per Cent of Total.
Owners	55,782	Whites	70,935
Cash Tenants	9,074	Negroes	135
Share Tenants	7,686	Indians	758
		Mongolians	814
			97.8
			2.2

The number and the proportion of owners operating their own holdings is much larger for 1910 than 1900, but details are not yet obtainable.

Progress in the Metropolis. The fifth anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.

San Francisco has won the admiration and wonder of the world by the courage and energy of her rebuilding, and stands to-day more fit than ever to occupy her proper place among the great cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represents sixty-one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of her people has been justified and the promise of greater prosperity for the future is hers.

To this prosperity the whole State contributes and in it shares.

San Francisco can now claim to be, in character and equipment of her new structures, the most up-to-date city in the world. She is now authorized by the Federal Government to invite the nations of the world to come and see for themselves when she opens the **Panama-Pacific International Exposition in 1915.**

The buildings erected since the fire represent a cost greater than those which were destroyed. The following is the official record:

BUILDING CONSTRUCTION—PRIVATE CAPITAL.

Building Permits granted in San Francisco from April, 1906, to January 1, 1910:

Class A	94	Buildings	\$21,547,260
" B	118	"	8,470,871
" C	1,585	"	48,775,267
Frames	14,534	"	59,958,224
Alterations	8,295	"	10,622,027
Total	24,626	"	\$149,373,649
Adding 15% for undervaluation			22,406,047
Total			\$171,779,696

Building activity still continues, as the figures for 1910 show.

FOR 1910.

Class A	23	Buildings	\$3,380,000.00
" B	17	"	786,000.00
" C	250	"	7,060,350.00
Frames	2,417	"	8,007,152.00
Alterations	2,983	"	1,275,054.00
Total	5,690	"	\$20,508,556.00
Adding 15% for undervaluation			3,076,283.40
Total			\$23,584,839.40
Total buildings as above from April 18, 1906, to December 31, 1909	24,626	Buildings	171,779,696.00
Grand Total	30,316	"	\$195,363,535.00

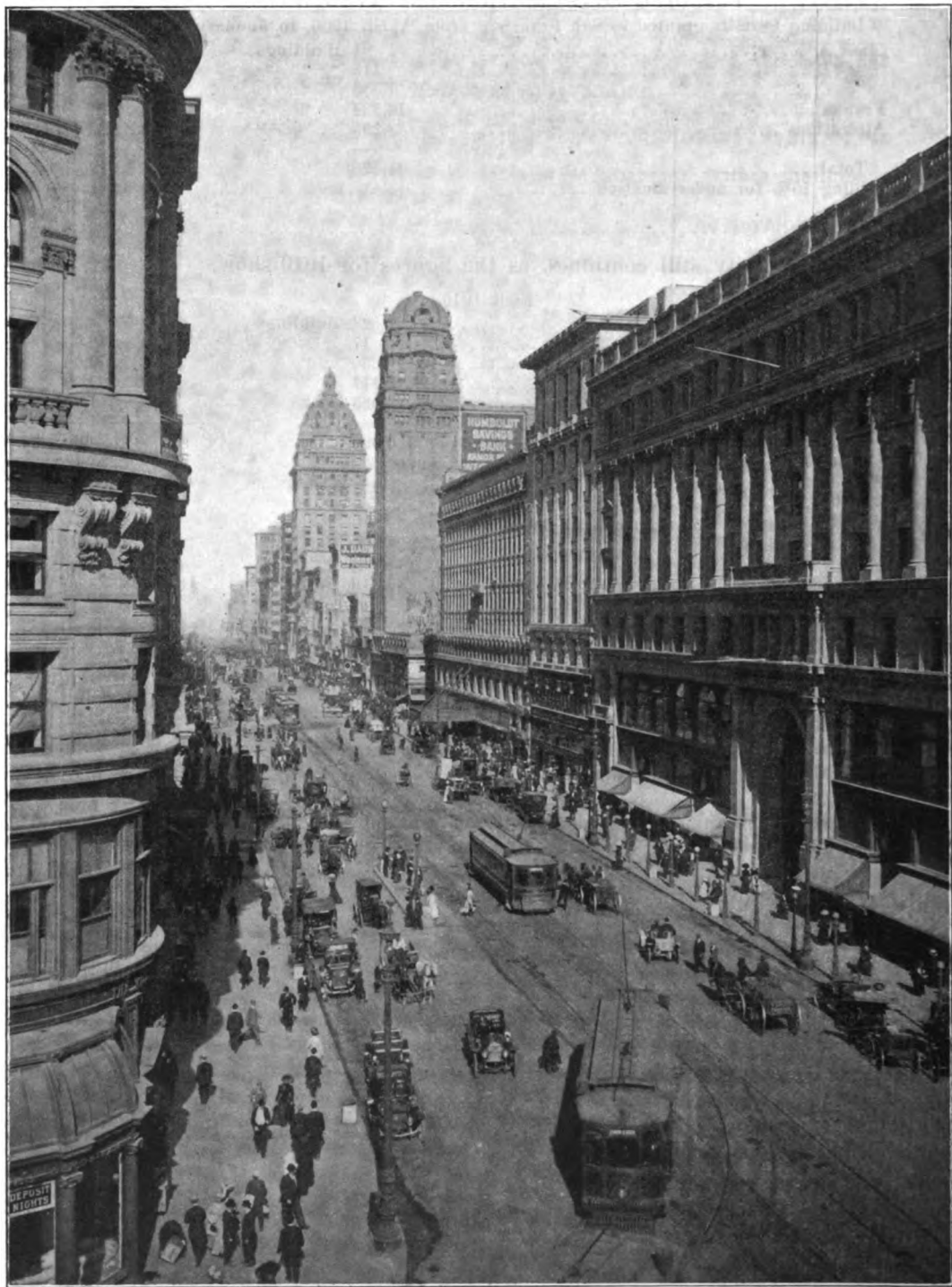
The increase over the figures for 1909, viz.: \$23,583,839, indicates most strongly the continuance and importance of the building operations. The number of buildings destroyed in the fire was 28,188, valued at \$105,000,000. There have been 2,128 more buildings, of a far better class erected since the fire and of nearly double the value of those destroyed.

The money expended by private parties for labor on new buildings amounts to some \$66,000,000, while the municipality has made large expenditures on the same account.

Though San Francisco has always been famous for its hotels, it has added largely to the number and size and now has some of the finest and best equipped hostleries in the country, and can demonstrate its ability to comfortably house any number of visitors that may be drawn within her gates at any one time.

The hotels number over 320, with nearly 30,000 rooms, and accommodations for 60,000 guests at one time. There are also over 300 apartment houses and over 500 lodging houses, in which a large share of the floating population find shelter.

New hotels, apartment houses and lodging houses are under construction, and the number will be greatly augmented. By the time of the opening of the Panama-Pacific International Exposition, San Francisco will be in a position to sustain her prestige for care of her visitors in the face of multitudes that will be drawn to the city on that notable occasion.



MARKET STREET, SAN FRANCISCO.
From Powell Street, looking toward the Ferry.

The growth in building activities has not been confined to the metropolis, as the following exhibit for Los Angeles, Oakland and other leading cities of the State shows:

	Valuation.		Valuation.
Los Angeles	{ 1905 { 1909 \$13,260,703 { 1910 21,684,100	Sacramento	{ 1906 \$ 994,811 { 1909 2,063,394 { 1910 2,164,456
Oakland	{ 1906 4,445,692 { 1909 5,318,512 { 1910 6,695,789	Pasadena	{ 1905 \$1,953,532 { 1909 1,888,826 { 1910 2,133,528
San Diego	{ 1905 1,193,170 { 1909 2,632,100 { 1910 4,005,200	San Jose	{ 1905 \$ 908,525 { 1909 1,195,280 { 1910 1,750,000

BUSINESS RECORD AND METROPOLITAN AREA.

The population of San Francisco, as seen by census returns, is 416,912. The population residing in the metropolitan area, with less than an hour's ride of the city, may be conservatively said to be 900,000 people.

While the population of the city has largely increased, the amount of public business and general industrial movement have kept pace with it, as is indicated by the following exhibit:

Postal receipts	\$ 2,488,222.54
Internal Revenue receipts	6,827,827.74
Mortgages and Releases	44,899,847.00
Real Estate sales	31,291,293.00
Imports	51,000,000.00
Exports—	
Foreign	34,500,000.00
Non-contiguous territory of United States	17,750,000.00
Custom receipts	7,125,711.00
Tonnage Movement for fiscal year ended June, 1910	5,306,134.00

ORIENTAL TRADE

For Fiscal Year Ended June 30, 1910.

Philippines	\$ 5,008,347.00
China	1,636,818.00
Japan	6,931,793.00
Asiatic Russia	107,884.00
Total	\$13,684,842.00

Harbor Improvements Planned. The important improvements along the waterfront under the \$2,000,000 State bond issue of 1904 have been pushed vigorously, and shipping facilities have been greatly increased. These improvements are but the beginning of those projected and provided by State bonds to the amount of \$9,000,000 authorized in 1910. At the same time \$1,000,000 bonds were voted for the acquisition of Islais Creek lands for an inland basin.

Within the next four years, by the time of the opening of the Panama-Pacific International Exposition in 1915, these extensions and improvements will be completed, giving San Francisco a wharfage line of 44.5, not including Channel Creek and the three large basins. A belt road connecting the piers with the transcontinental railway lines, will furnish ideal facilities for handling the commerce of the port.

San Francisco deservedly ranks as one of the Great Cities of the World. She is a Great City by reason of her position and power in the social, commercial and financial world. San Francisco is pre-eminently a commercial city. It is a foreign and domestic market without a peer on the Pacific Coast. The city has all the advantages of location possessed by any of the great commercial centers of the world. It is situated on the north end of a peninsula, six miles wide and twenty miles long, separating San Francisco Bay from the Pacific Ocean.

As a seaport it receives the commercial drainage of a region that has the greatest variety of natural resources of any part of the earth. That drainage is the great inextinguishable, economic fact that rebuilt San Francisco after the catastrophe of 1906 on greater lines than before. It was economic pressure that forced and inspired the energies which have made a new city that is the wonder of the world.

The Commerce of the Bay. The great seaport of Pacific America, with constantly expanding commerce demands ever-widening facilities for handling it.

Fortunately this demand is being met by San Francisco and Oakland, the two great cities of the bay region. Formerly there was danger that much of our commerce would be alienated by the lack of adequate port and dock facilities. This risk is no longer imminent. The San Francisco Harbor Commissioners, watchful of the needs of trade, are wisely expanding its facilities on the waterfront within their jurisdiction. But when they have done all within their power, the expansion of commerce will not stop, and to meet it Oakland is wisely and watchfully moving to develop her splendid waterfront to secure deep water to accommodate the largest ships and to meet commerce by water and rail facilities that will give trade a line of least resistance.

The Oakland waterfront is a great asset of the Pacific trade, and its improvement now planned and in progress means that the commerce of all time is to have on San Francisco Bay every advantage that natural situation justifies and that enlightened public enterprise can supply.

For that improvement Oakland has voted a bond issue of \$3,500,000, and the grantees of that city are beginning the expenditure of \$16,000,000 additional on the western and southern waterfront. When these improvements are completed Oakland will offer facilities which may well rank with those of Hamburg, Havre, The Hague and Liverpool.

Hereafter, then, there need be no fear that any ship, however great her tonnage or deep her draught, will fail of accommodation in this bay, or that any cargo, in or out, will lack the latest and most economical device for handling and transfer. The same spirit is upon both cities, not in rivalry, but with the determination that this seaport, intended by nature to be one of the world's greatest, shall by art and enterprise fulfill its destiny.

FINANCIAL CONDITIONS IN CALIFORNIA.

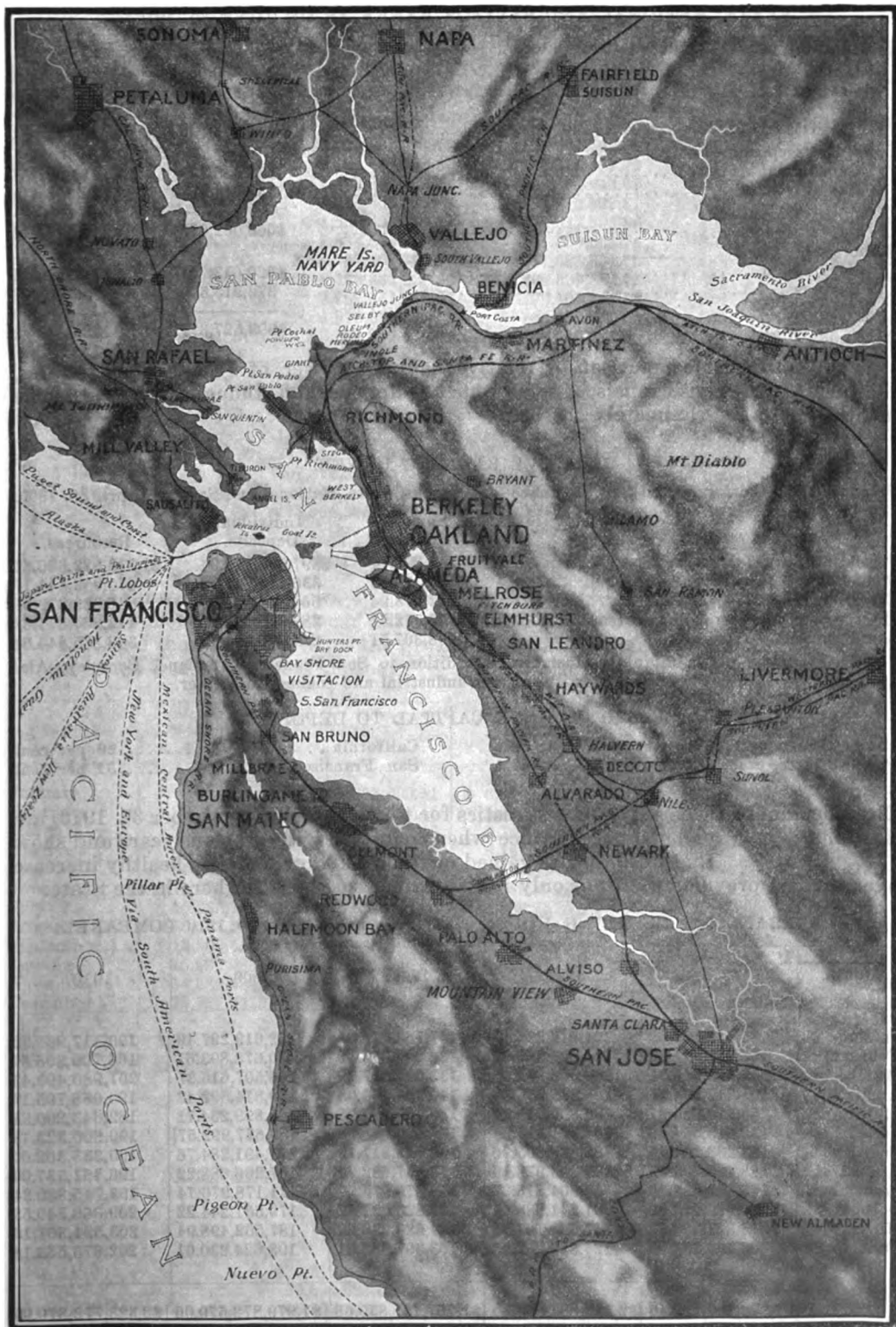
The following exhibit by E. F. Adams, Esq., of financial conditions in the State at the close of the last fiscal year, June 30, 1910, shows California finances to be in a very healthy condition:

STATE COMMERCIAL BANKS, JUNE 30, 1910, INCLUDING TRUST COMPANIES.

	Loans.	Individual deposits.	Ratio of dep. to loans. per cent.	Cap., sur. & undivided profits.	Ratio of cap. & sur. to dep. p. c.
California	\$110,871,361	\$121,665,205	109.73	\$52,506,712	43.16
San Francisco	31,339,587	36,608,947	116.81	15,024,293	41.04
Los Angeles	10,355,310	11,356,039	109.66	5,507,906	48.50
California, less San Francisco and Los Angeles..	69,176,464	73,700,219	106.68	31,974,813	42.02

CALIFORNIA NATIONAL BANKS, JUNE 30, 1910.

	Loans.	Individual deposits.	Ratio of dep. to loans. per cent.	Cap., sur. & undivided profits.	Ratio of cap. & sur. to dep. p. c.
California	\$217,628,496	\$212,521,069	97.65	\$87,573,369	41.20
San Francisco	106,988,712	85,339,612	79.76	50,231,668	58.86
Los Angeles	35,325,038	36,445,150	103.18	11,092,407	30.13
California, less San Francisco and Los Angeles..	75,314,745	90,736,290	120.47	26,249,294	28.03



SAN FRANCISCO BAY AND VICINITY.

CALIFORNIA DEVELOPMENT BOARD.

STATE, NATIONAL AND SAVINGS BANKS AS OF JUNE 30, 1910.

Capital, Surplus and Profits—	California.	San Francisco.
Commercial	\$140,080,081	\$ 65,255,961
Savings	37,688,709	15,395,860
Total	\$177,668,790	\$ 80,651,821
Individual Deposits—		
Commercial	\$334,386,265	\$121,948,557
Savings	331,615,814	159,866,419
Total	\$666,002,079	\$281,814,976
Resources—		
Commercial	\$620,613,741	\$277,387,425
Savings	372,915,636	175,596,447
Total	\$993,527,377	\$452,983,872

The following comparison of relative banking power of Pacific Coast States, California and San Francisco, is of much interest, and though prepared some months ago is approximately correct:

RELATIVE BANKING POWER.

Pacific States, California and San Francisco—All Banks, State, National and Savings, April 28, 1909.

	Capital, Surplus and Profits.	Individual Deposits.	Resources.
Pacific States	\$244,260,398.74	\$897,099,158.94	\$1,313,922,320.82
Pacific States, except California	77,423,319.80	336,112,844.92	470,952,441.17
California	166,837,078.94	560,986,314.02	842,969,879.65
*San Francisco metropolitan area	85,765,572.51	287,775,650.10	442,264,874.68
San Francisco	77,698,307.51	244,275,241.10	388,335,844.68

*San Francisco metropolitan area includes, in addition to San Francisco, Oakland, Berkeley, Alameda and South San Francisco, constituting one industrial and commercial center.

RATIO OF BANK CAPITAL TO DEPOSITS.

Pacific States	27 per cent	California	29 per cent
Pacific States, except California	23 per cent	San Francisco	31 per cent

Clearing House Exhibits. Clearing house statistics for the year ended December 31, 1910, are of much significance when compared with previous years and show that business has gained in volume and evidences a healthy increase over the last previous year, not only in San Francisco, but elsewhere in the State.

SAN FRANCISCO CLEARING HOUSE EXHIBIT FOR 1906 TO 1910 COMPARED.

Month.	1906.	1907.	1908.	1909.	1910.
January . .	\$ 185,519,862.09	\$ 204,512,323.10	\$ 147,763,112.04	\$ 152,619,297.49	\$ 190,117,967.52
February . .	156,271,911.56	194,294,366.93	128,006,385.32	130,678,893.61	166,709,308.39
March . . .	199,665,648.33	200,558,251.65	133,514,197.29	166,507,616.37	201,980,493.42
April	*107,847,591.36	198,035,735.38	140,364,763.08	159,814,592.42	190,058,795.17
May	**50,620,020.87	188,809,919.71	130,439,997.35	149,899,254.71	182,643,200.21
June	132,615,554.48	168,591,327.38	137,096,068.98	159,677,992.57	190,890,323.18
July	163,268,204.46	182,833,805.76	153,112,317.72	171,491,284.76	195,333,362.00
August . . .	188,465,609.49	183,343,978.10	148,557,682.70	157,266,688.22	196,461,337.00
September .	185,499,838.13	169,804,815.37	149,375,975.70	171,178,976.74	193,745,829.24
October . . .	206,989,793.02	201,241,688.01	170,825,027.47	179,551,244.22	209,362,340.53
November . .	218,367,350.77	117,528,161.48	154,689,236.62	187,562,498.94	203,594,361.15
December . .	203,269,394.90	124,329,252.93	163,897,085.81	193,624,230.01	202,875,553.18
	\$1,998,400,779.46	\$2,133,883,625.80	\$1,757,141,850.08	\$1,979,872,570.06	\$2,323,772,870.99

*14 days. **21 days.

The bank clearings of San Francisco have more than doubled since 1900. The record of advancement in the previous ten years is as follows:

Year.	Clearings.	Balances.	Days.	Average Daily Clearings.
1900	\$1,029,582,594.78	\$118,157,405.71	303	\$3,397,962.86
1901	1,178,169,536.30	138,515,989.73	304	3,875,557.68
1902	1,373,362,025.31	166,234,644.08	303	4,532,547.94
1903	1,520,200,682.07	177,810,822.37	305	4,984,264.58
1904	1,534,631,136.73	170,617,891.90	305	5,031,577.49
1905	1,834,549,788.51	187,250,804.74	304	6,034,703.25
1906	1,998,400,779.06	217,625,954.70	288	6,938,891.59
1907	2,133,882,625.80	209,800,867.05	304	7,019,350.74
1908	1,757,151,850.08	179,197,342.26	304	5,780,071.87
1909	1,979,872,570.06	189,659,255.04	303	6,534,232.90
1910	2,323,772,870.99	241,739,742.93	301	7,720,175.65

BANK CLEARINGS FOR LOS ANGELES FROM 1900 TO 1910.

1900	\$122,692,555.55	1906	\$578,635,516.82
1901	161,466,671.54	1907	581,803,982.00
1902	245,516,094.85	1908	505,588,756.02
1903	307,316,530.90	1909	673,165,728.81
1904	345,343,956.35	1910	811,387,487.47
1905	478,985,298.40		

Clearings of Oakland Banks.

The following table shows the clearings of the State and National banks of Oakland by months for the year 1910, compared with the figures for 1907, 1908 and 1909 and those of 1906, after the great fire in San Francisco in April, 1906, which forced much business across the bay:

Month.	1906.	1907.	1908.	1909.	1910.
January		\$ 17,302,600.11	\$ 6,544,056.38	\$ 7,831,461.91	\$ 9,636,636.30
February		15,753,647.15	5,628,509.38	6,699,310.07	12,038,510.90
March		15,181,972.36	6,149,777.81	8,077,923.72	15,071,417.69
April		13,946,556.83	6,199,228.26	7,801,905.92	13,146,947.25
May	\$ 14,552,984.32	12,635,130.42	5,743,424.64	7,737,935.62	12,675,519.20
June	16,039,430.90	10,856,077.71	5,980,398.98	8,259,001.95	12,400,320.36
July	15,826,707.92	10,880,058.21	6,823,767.70	8,766,237.67	13,663,909.47
August	15,663,587.57	10,130,573.93	6,271,931.94	7,974,310.71	12,897,011.64
September	12,809,454.23	10,496,360.40	6,299,960.18	8,062,173.79	13,159,179.38
October	15,890,985.86	11,348,490.56	7,317,519.54	7,866,041.30	13,990,656.62
November	14,332,584.94	6,210,924.75	6,425,664.75	8,413,337.01	13,334,039.26
December ...	15,737,631.09	5,673,646.55	7,463,553.43	9,037,448.42	15,476,540.85
	\$120,853,366.83	\$140,416,038.98	\$76,847,792.99	\$96,527,088.09	\$157,480,688.92

Bank Clearings of Other Cities.

SACRAMENTO.

1909	\$54,512,723.22
1910	70,870,997.13

SAN DIEGO.

1906	\$36,218,236.32
1909	52,094,521.00
1910	66,708,874.00

FRESNO.

1909	\$29,324,258.30
1910	38,275,344.20

SAN JOSE.

1907	\$15,504,767.53
1909	25,320,894.50
1910	27,828,978.64

STOCKTON.

1909	\$28,195,022.20
1910	32,342,840.13

PASADENA.

1910	\$40,570,318.90
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CALIFORNIA DEVELOPMENT BOARD.

VALUES OF PROPERTY IN, AND INDEBTEDNESS OF, EACH COUNTY FOR THE YEAR 1910 AND RATE OF TAXATION.
(STATE RATE, 35.3 CENTS.) Controller's Department, State of California.

COUNTIES	Classification	Value of Real Estate	Value of Improvements on Real Estate	Value of Personal Property	Money and Solvent Credits	Value of Railroads as Assessed by State Board of Equalization	Grand Total Value of All Property	Total County Indebtedness	Total State and County Taxation Each \$100
Alameda	3d Class	\$110,963,950	\$63,134,550	\$19,162,085	\$2,554,312	\$4,391,205	\$200,206,102	\$15,226.00	\$1.16
Alpine	57th	228,959	318,443	61,779	.....	197,730	509,180	.....	2.20
Amador	35th	3,387,648	1,700,063	566,293	22,695	2,611,317	5,874,335	.....	1.43
Butte	23d	11,894,060	4,696,745	3,554,989	164,937	3,662,000	22,832,572	38,000.00	1.60
Calaveras	33d	3,484,135	1,567,375	807,630	29,135	3,624,000	13,478,579	.....	1.30
Colusa	42d	1,231,900	1,326,720	1,744,275	159,845	3,600,300	13,378,570	.....	1.70
Contra Costa	19th	17,239,540	7,332,950	6,627,155	794,540	3,406,163	35,399,378	161,000.00	1.25
Del Norte	55th	3,328,172	2,266,234	301,611	7,539	.....	368,606	1,500.00	1.25
El Dorado	40th	3,519,000	1,747,735	632,415	22,715	779,793	6,128,658	.....	1.72
Fresno	47th	38,779,931	12,974,070	8,781,952	422,717	6,305,702	65,264,422	.....	1.20
Glenn	7th	10,006,200	3,044,170	1,581,864	174,083	1,421,327	14,087,544	13,000.00	1.90
Humboldt	11th	21,742,940	4,146,560	2,842,550	417,187	.....	28,149,177	.....	1.40
Imperial	36th	1,418,054	1,371,238	1,314,214	11,500	2,532,114	12,148,180	.....	1.30
Inyo	53d	1,369,725	1,562,690	706,865	75,260	692,940	4,907,480	55,000.00	1.83
Kern	26th	26,769,565	7,913,235	14,564	6,659,138	52,350,546	83,206,000	.....	1.15
Kings	37th	7,598,646	1,894,065	1,782,984	104,063	1,640,353	13,160,592	.....	1.95
Lake	45th	2,805,587	811,300	1,923,095	75,306	.....	3,648,189	37,000.00	1.75
Lassen	51st	4,216,456	646,991	1,453,516	134,160	1,337,161	7,732,317	1,094,000.00	1.60
Los Angeles	2d	323,303,215	116,482,235	72,317,720	9,908,384	8,889,005	531,400,559	.....	1.90
Madera	44th	6,262,005	930,860	1,457,560	23,255	1,949,366	10,622,356	.....	1.45
Marin	29th	11,109,655	5,413,880	1,677,400	88,085	1,420,353	18,709,273	57,000.00	1.15
Mariposa	49th	1,462,807	383,790	378,120	650	2,695,225	2,491,892	1,900.00	2.60
Mendocino	14th	9,986,168	2,801,946	2,281,333	84,991	1,039,348	16,693,766	72,500.00	1.50
Merced	39th	12,162,380	2,158,235	3,089,085	87,271	3,396,325	20,892,796	70,000.00	1.45
Modoc	48th	3,902,035	776,768	1,206,157	101,760	149,791	6,136,543	.....	1.35
Mono	58th	592,385	206,220	480,645	3,700	66,740	1,349,690	.....	1.25
Monterey	16th	16,815,960	4,334,450	81,490	81,490	3,511,747	28,352,356	76,900.00	1.70
Napa	27th	7,151,610	5,353,520	2,417,015	173,150	1,693,029	16,688,324	.....	1.32
Nevada	21st	3,026,530	2,813,880	1,069,300	57,835	1,095,717	8,063,262	.....	2.00
Orange	15th	17,871,190	5,315,875	4,414,160	173,135	2,823,172	30,597,532	50,000.00	1.20
Placer	28th	5,570,930	2,643,300	1,481,600	78,810	3,501,198	13,275,928	135,100.00	1.60
Plumas	50th	4,124,235	649,730	529,673	42,797	1,430,603	6,777,118	20,000.00	1.80
Riverside	20th	12,368,232	6,968,145	2,214,898	137,500	4,706,996	26,925,831	150,000.00	1.20
Sacramento	6th	35,607,510	15,001,340	1,506,060	1,167,245	2,963,377	61,646,032	1,656,325.00	1.62
San Benito	43d	4,531,045	1,809,865	1,208,175	72,920	12,995,332	48,895,397	.....	1.10
San Bernardino	10th	20,793,130	13,333,785	4,522,730	181,208	2,776,342	44,195,374	500,000.00	1.40
San Diego	9th	31,705,206	8,507,087	4,973,303	31,970,618	3,922,325	55,120,069	16,314,500.00	2.00
San Francisco	1st	288,095,453	145,167,790	5,032,366	1,042,837	5,103,369	46,588,111	750,000.00	1.25
San Joaquin	26th	2,369,334	1,040,699	3,396,363	181,929	2,040,369	18,285,413	35,000.00	1.44
San Luis Obispo	8th	9,666,354	2,999,844	1,834,095	329,755	3,840,661	37,673,681	182,000.00	1.12
San Mateo	32d	17,413,120	7,156,050	5,748,357	179,355	3,283,318	31,186,290	.....	1.45
Santa Barbara	17th	15,340,215	6,134,045	6,018,065	439,425	2,287,412	78,144,102	300,000.00	1.12
Santa Clara	4th	44,478,310	19,920,890	1,892,145	1,043,835	1,053,021	17,817,571	13,000.00	1.25
Santa Cruz	13th	10,071,105	4,696,465	1,634,340	51,120	2,471,911	16,072,141	.....	1.35
Shasta	22d	8,301,400	3,613,370	2,672,260	2,370	250,382	2,429,947	.....	2.00
Sierra	54th	1,371,885	3,030,316	1,925,395	225,905	2,605,038	17,292,449	.....	1.15
Siakiyou	24th	9,605,795	5,489,595	2,576,088	147,741	1,870,565	32,822,851	250,000.00	1.45
Solano	12th	12,738,862	5,489,595	2,576,088	147,741	1,870,565	32,822,851	250,000.00	1.45
Sonoma	6th	15,385,775	10,049,390	4,125,495	303,550	2,909,614	36,822,794	2,216.39	1.30
Stanislaus	38th	1,889,150	3,392,500	2,708,825	202,780	2,883,802	34,078,057	.....	1.25
Sutter	46th	7,896,480	1,032,350	867,126	59,965	1,308,059	8,163,960	.....	1.30
Tehama	35th	1,584,400	2,313,185	2,142,320	197,430	1,659,816	13,897,891	3,000.00	1.57
Trinity	52d	2,556,666	6,327,102	3,331,395	18,596	4,879,478	37,445,140	.....	2.25
Tulare	18th	2,270,482	6,231,035	3,741,175	222,975	4,879,478	37,445,140	.....	1.10
Tuolumne	34th	4,573,690	2,734,230	620,840	22,000	2,704,567	8,485,527	.....	1.45
Ventura	30th	17,406,126	2,375,680	2,540,086	186,145	2,709,601	35,518,550	.....	1.45
Yolo	31st	13,019,460	2,712,670	2,214,530	192,850	2,198,865	20,328,565	.....	1.20
Yuba	41st	3,292,840	1,642,360	1,561,010	179,310	1,156,099	7,821,519	.....	2.20
Totals	.....	\$1,364,208,233	\$547,036,091	\$278,669,645	\$54,321,410	\$129,751,713	\$23,397,092	\$23,401,411.39	.....

Note.—Where two rates of taxation are given, the lesser rate is that levied upon property situated within the limits of incorporated cities or towns, such property being exempt from road tax.



EXHIBIT HALL OF CALIFORNIA DEVELOPMENT BOARD.

GENERAL SUMMARY AND COMPARATIVE TABLE OF SHIPMENTS OUT OF STATE BY RAIL AND BY SEA, OF FRUITS, WINE, BRANDY AND VEGETABLES
FOR SIXTEEN CONSECUTIVE YEARS.

Tons of 2,000 Pounds.

Kinds.	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910 by rail
Green Deciduous Fruits	66,254.8	57,638.3	72,350.2	69,732.2	96,943.6	91,176.5	92,673.7	100,390.9	101,198.7	73,983.6	115,083.6	113,679.0	105,066.0	161,224.0	203,275	204,876
Citrus Fruits	115,825.5	99,156.0	98,547.0	180,658.9	131,916.8	226,546.6	322,871.4	225,668.8	299,623.4	385,747.6	454,083.4	383,418.9	413,896.1	399,094.0	475,959	446,384
Dried Fruits	61,886.4	48,522.8	75,159.7	76,662.7	86,925.3	90,052.8	106,987.1	151,944.5	149,531.1	156,769.3	118,479.3	112,176.9	184,821.6	133,846.0	154,756	128,892
Raisins	46,390.1	34,434.6	39,065.8	47,796.3	36,008.7	36,047.0	43,314.0	47,575.2	39,963.4	54,134.7	32,684.7	42,457.3	*	*29,601.0	61,584	67,278
Nuts and Olives..	3,234.7	4,972.6	5,808.6	5,815.8	6,608.4	6,518.4	8,462.4	10,918.9	9,377.4	9,810.5	7,610.5	5,131.5	7,198.0	10,887.5	12,438	12,308
Canned Fruits and Vegetables....	41,395.5	45,546.9	73,494.7	52,219.7	75,240.0	75,556.9	82,229.1	80,634.8	94,204.8	86,077.9	91,877.9	77,626.5	104,624.6	185,135.0	171,223	173,746
Raw Vegetables...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93,500.8	86,014	78,829
Wine and Brandy..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70,758.2	75,656	82,144
Carloads 10 Tons Each.																
Carloads Fruit by rail and sea ...	33,547.2	29,026.7	36,439.6	43,288.6	43,364.3	52,901.5	65,953.8	61,713.3	69,689.3	76,655.4	81,976.9	73,449.0	81,640.7	82,173.0	101,206	93,349
Carloads Vegetables by rail and sea...	3,613.6	1,130.6	4,243.8	3,045.6	2,613.6	4,367.8	8,371.7	6,130.2	7,839.2	4,428.6	5,961.0	3,982.0	4,808.2	9,350.0	8,978	7,883
Carloads Wine and Brandy, by rail and sea	8,056.8	7,609.0	6,897.8	9,014.0	8,713.9	9,067.3	8,505.3	8,868.2	9,732.2	10,148.8	10,641.8	8,146.9	8,550.5	7,075.3	10,506	8,214
Carloads Fruit, Vegetables, Wine and Brandy, by rail and sea	45,257.4	38,254.0	48,072.0	56,149.6	55,482.5	66,797.8	83,731.9	77,538.1	88,084.3	92,052.7	99,409.8	90,577.9	95,299.4	98,603.8	120,690	109,456

Previous to 1910 shipments of fruits, vegetables, etc., by rail and sea were not segregated. For 1910 the table includes only rail shipments and the shipments by sea are given in a special exhibit on another page.

According to figures furnished by the railroads, there were brought into California in 1910 from other States: Dairy products (lbs.), 12,346,000; poultry, game and fish (lbs.), 5,416,000; eggs (doz.), 10,176,690. This shows that there is no over-production in these lines in California.

*All shipments of raisins by rail and by sea are included in dried fruits in 1907 and some in 1908.
†Includes shipments of canned vegetables. The pack of canned fruits and vegetables for 1910 is given on pages 28 and 30.
‡Included in the above table with nuts were 39 carloads of pickled olives and 32 carloads of olive oil.

Dairy and poultry products, fresh and canned vegetables taken on at this port as supplies and not included above, reach a value of over \$1,500,000. Shipments by rail in 1910 were 11,234 carloads less than rail and water shipments in 1909, but larger than any previous year. The shipments by sea added to those by rail would bring the total for 1910 somewhat above the figures for 1909.

EXPORTS BY SEA OF CALIFORNIA FRUIT AND VEGETABLES FROM SAN FRANCISCO TO FOREIGN COUNTRIES.

	Amount.	Value.
Prunes	36,586,765 lbs.	\$2,117,652
Raisins	6,146,480	307,133
Apricots	4,988,215	562,622
Peaches	3,053,735	132,047
Apples, dried	1,522,954	121,836
Apples, green	20,683 boxes	41,366
Oranges	16,694 boxes	38,858
Fruits		153,835
Canned Fruit	598,630 cases	1,795,890
Nuts		152,479
Beans	33,703	108,672
Onions	26,853	22,929
Potatoes	51,527	40,852
Vegetables, canned		289,788
Vegetables, all other.....		61,305

EXPORTS BY SEA OF CALIFORNIA FRUIT, VEGETABLES AND WINE FROM SAN FRANCISCO TO OTHER STATES AND NON-CONTIGUOUS TERRITORY.

TO ALASKA—	Amount.	Value.
Fruit, dried and green.....	835,543 lbs.	\$ 27,050
Fruit, canned and pressed.....	758 cases	32,198
Nuts		8,291
Dairy Produce		129,270
Vegetables		14,403
Wine	8,485	7,115
TO TUTUILA—		
Fruit, dried and green		38
Fruit, canned	880	3,641
Dairy Products		283
Vegetables		1,571
Wine, gallons	146	165
TO ATLANTIC STATES—		
Fruit, dried	23,372,837 lbs.	918,225
Fruit, canned	371,221 cases	1,113,663
Wine and Brandy.....	8,421,288 gals.	2,575,592
Beans	11,172,251 lbs.	670,335
TO HAWAII—		
Fruits, green, dried and canned.....	4,123,045 lbs.	225,957
Dairy Products		379,172
Vegetables		220,202
Wine	866,311 gals.	350,859
TO OREGON & WASHINGTON—		
Fruits, green, dried and canned.....	9,879,000 lbs.	765,000
Vegetables		900,000
Dairy Produce		150,000

ORCHARD AND VINEYARD.

Citrus The shipments of citrus fruits from California for the season Nov. 1, 1909, to Oct. 31, 1910, while nearly 9,000 carloads less than the one ending 1909, were yet greater than in any year previous. They totaled 33,099 carloads, of which 25,331 carloads of oranges and 4,674 carloads of lemons went from south of Tehachapi. The balance, 2,789 carloads went from Central and Northern California. The Tulare district sending 2,220 carloads of oranges and 110 carloads of lemons; the northern district furnished the rest, 439 carloads. The shipments were by freight and exclusive of what was marketed within the State and those shipped East by express. The development of the citrus industry in California, which now amounts to between 13,000,000 and 18,000,000 boxes can be seen by reference to the table on the preceding page. It is nearly three times as great as all the other States combined.

Fresh Fruit. The fruit distributing associations and others furnish statistics of shipments of deciduous fruits to Eastern markets for the year 1910, as given in the table herewith.

As the varieties are shown, they add to the value of the tables of shipments. The figures are for actual carloads without regard to tons in a car. The minimum fixed by the railway companies now is 15 tons, but a carload is often 30 tons. Other tables in the report retain the original 10-ton unit. As an illustration, the table on a preceding page shows 16,122 carloads of fresh fruit for 1908, while the Fruit Association's table gives the number at 12,917 cars. An apparent discrepancy occurs in using actual carloads in one instance and the 10-ton unit in the other.

SHIPMENTS FROM NORTH OF TEHACHAPI.

Varieties.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Cherries	209	79	150	98	208¼	250	250
Apricots	97	279	16	71	231¼	210	290
Peaches	559	1946	584	699	1980¼	2599	2518
Plums and Prunes.....	1053	1391	1220	1039	1763	1526	1552
Pears	2186	1013	1513	1039	2701½	2638	2361
Grapes	1541	1602	2052	3460	3816¼	5880	4948
Apples	71	1761	770	1085	2216	2188	2153
*Miscellaneous						19	
	5716	8071	6305	7491	12917	15280	14072

*Includes quinces, persimmons and figs previous to 1909 not counted separately.

While the above table gives but 2,153 carloads as the total shipments of apples from the State for the year 1910, the secretary of the Commercial League of Watsonville places the shipments from the Pajaro Valley at 4,000 carloads.

Dried Fruits. Nearly all kinds of deciduous fruits are dried for the market, but prunes, peaches and apricots are the most important. The dried output of all, except figs, varies largely according to the season, the demand of the Eastern market for fresh fruit, and the prices offered by the canners.

OUTPUT OF DRIED FRUITS, NOT INCLUDING PRUNES AND RAISINS, 1900-1910, IN TONS.

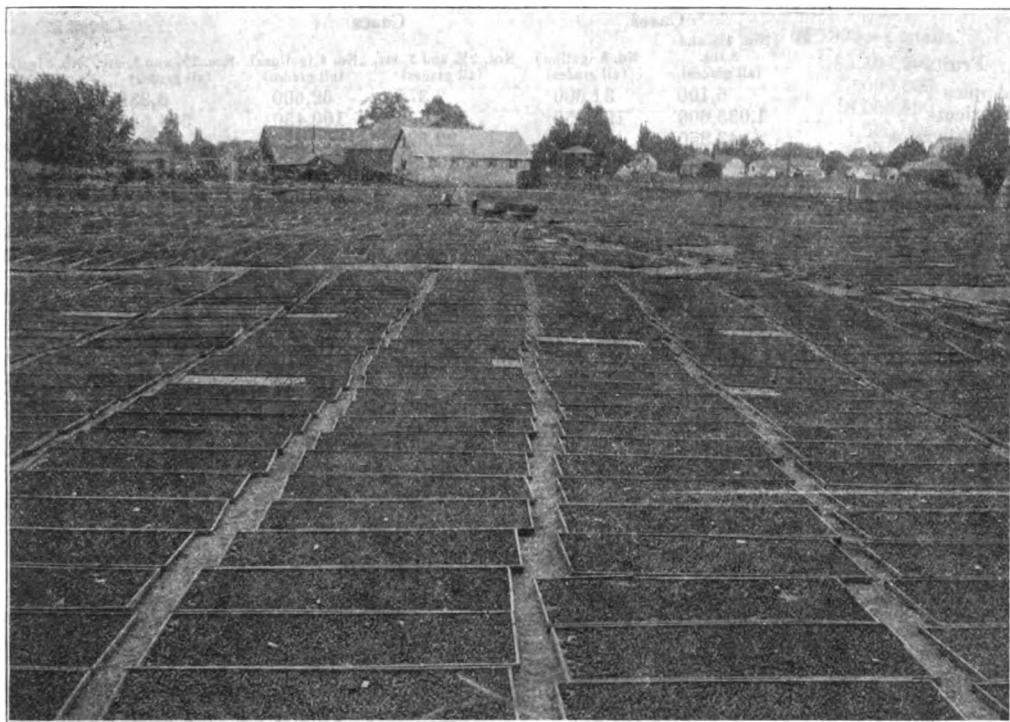
Year	Peaches	Apricots	Apples	Pears	Plums	Nectarines	Grapes	Figs
1900	17,170	14,000	3,150	7,275	1,950	435	240	2,000
1901	14,755	7,776	3,225	3,290	1,725	317	180	3,260
1902	25,210	18,762	4,875	2,625	1,280	455	188	3,625
1903	16,075	10,500	1,800	2,325	1,435	317	205	3,000
1904	11,500	8,500	1,500	1,750	1,150	210	170	2,850
1905	17,500	19,250	3,250	1,750	930	185	193	3,625
1906	11,250	3,250	2,750	3,500	1,100	170	200	3,375
1907	12,000	1,500	1,500	500	750	137	188	3,000
1908	22,500	19,000	3,000	1,200	1,000	350	1,500	3,000
1909	20,000	14,500	2,500	1,250	500	375	325	3,500
1910	25,000	16,000	3,100	1,000	375	250	350	3,775
Average ten previous years	16,796	12,000	2,755	2,547	1,257	295	339	3,126

Prunes. Of dried fruits, prunes come next in importance to raisins. Prunes are grown in many counties throughout the State; the largest center of this industry is the Santa Clara Valley. A good many prunes are grown in the San Joaquin and Sacramento Valleys and also in Contra Costa and Sonoma Counties.

The output varies largely in different years. The most reliable figures place the output for 1910 at 45,000 tons, or half the production of 1906.

CALIFORNIA PRUNE OUTPUT.

Year	Tons	Year	Tons
1897	48,840	1904	67,500
1898	45,210	1905	37,500
1899	56,863	1906	90,000
1900	87,000	1907	40,000
1901	40,800	1908	25,000
1902	98,500	1909	77,500
1903	82,500	1910	45,000



FRUIT DRYING.

The following exhibit is of some interest in this connection as showing the trend of trade in dried fruits.

(Compiled by George Robertson, Fresno, Cal.)

EXPORTS AND IMPORTS OF CALIFORNIA RAISINS AND OTHER CURED FRUITS AND ORANGES.

Year	RAISINS. (Pounds)		EXPORTS. (Pounds)			
	Export	Import	Apricots	Peaches	Prunes	Oranges (Boxes)
1905	3,978,645	11,511,347	13,616,010	700,902	34,820,748	.....
1906	9,749,690	4,537,648	3,268,457	1,819,863	31,777,704	.....
1907	4,720,606	9,927,771	1,540,471	1,354,317	37,674,800	.....
1908	7,084,178	4,875,693	14,463,948	1,296,095	18,087,319	714,365
1909	8,363,845	5,219,649	13,644,135	2,843,968	83,128,101	952,869
1910	15,547,074	3,022,918	18,366,055	4,946,406	64,470,370	962,229

The quantity of fruit exported depends to a certain extent on the size of the crop; for example, the prune crop for 1910 is estimated at about 74,000,000 lbs., compared with 150,000,000 the previous year, which was one of the largest on record. The apricot crop also varies greatly.

Canned Fruit. The canning of fruit and vegetables is an important industry in California, and the yearly output of canned goods is very large.

The aggregate number of cases of all kinds of fruit and berries canned in 1909 was nearly a million and three quarter cases less than in 1908, but was larger than for any previous year. The demand for fresh fruit at home and for shipping takes a large quantity of fruit that would otherwise go to the canner.

The following exhibit by courtesy of the "California Fruit Grower" is made of the various kinds of fruit canned in 1908, 1909 and 1910.

CALIFORNIA DEVELOPMENT BOARD.

Fruits—	1908 Cases		1909 Cases		1910 Cases	
	Nos. 2½ and 3 lbs. (all grades)	No. 8 (gallon) (all grades)	Nos. 2½ and 3 (all grades) etc.	No. 8 (gallons) (all grades)	Nos. 2½ and 3, etc. (all grades)	No. 8 (gallons) (all grades)
Apples	6,100	31,600	7,375	62,600	6,280	70,550
Apricots	1,035,600	125,650	563,660	100,450	554,530	198,630
Blackberries	43,250	44,300	22,625	27,330	26,425	35,600
Cherries, Royal Ann.	100,700	5,000	110,250	7,450	123,240	13,050
Cherries, black	39,200	1,525	16,700	1,375	18,110	1,510
Cherries, white	52,100	3,630	51,640	4,520	33,410	5,875
Grapes	37,620	7,925	20,105	4,365	39,285	6,360
Loganberries	1,029	1,371	3,204	808	6,977	5,662
Nectarines	1,502	171	.....	14	.....	1
Pears	611,500	29,050	466,530	34,910	568,125	51,230
Peaches, free	835,400	136,950	401,800	145,375	553,000	195,825
Peaches, cling	1,240,350	87,260	779,725	109,260	1,233,200	163,425
Plums	209,300	30,525	75,450	13,975	65,550	14,810
Raspberries	5,365	585	3,375	215	9,335	791
Strawberries	4,960	820	9,690	890	13,225	848
Other fruits	272	1,053	700	635	2,250	1,400
Total fruit (cases)	4,227,248	507,415	2,532,829	514,172	3,242,942	765,607
Grand total fruits.		4,734,663		3,047,001		4,008,549

It is given by same authority that the aggregate amount of canned fruit and berries for 1910 amounted to 4,058,549 cases.

The following table shows the production during the last ten years:

CANNED FRUITS.

Year	Cases	Year	Cases
1901	2,677,082	1906	3,109,225
1902	2,252,790	1907	2,982,985
1903	2,783,504	1908	4,734,663
1904	2,840,614	1909	3,047,001
1905	3,283,296	1910	4,008,549

The Vineyard. California is easily the most important factor in viticulture in the United States, and grape culture is one of the most widespread industries in the State, 342,519 acres, according to the State Board of Equalization, being devoted to the industry, of which 160,573 acres are in wine grapes, 128,217 acres in raisin grapes, and 53,729 acres in table grapes, which is being increased every year, especially of table grapes.

All varieties of European grapes are included, besides many California developments therefrom.

The annual value of the grape product, including table grapes, dried grapes and raisins, and wine and brandy, aggregates over \$25,000,000. The shipments of table grapes out of the State by rail for 1910 amounted to 4,948 carloads.

Raisins. The center of the raisin industry is in Fresno County, although raisins are produced in other parts of the State. The crop varies from year to year, as the appended table shows; that for 1910 exceeds the average of the six preceding years.

CALIFORNIA RAISIN CROP.

Year	Tons	Year	Tons
1897	46,852	1904	37,500
1898	40,365	1905	43,750
1899	35,784	1906	47,500
1900	47,167	1907	60,000
1901	37,125	1908	60,000
1902	54,375	1909	70,000
1903	60,000	1910	56,000

The above figures show that Fresno County now produces about 60 per cent of the California raisin crop, and nearly twice the quantity produced by Spain, which produces from 15,000 to 30,000 tons and has held the lead for centuries. It was in 1892 that the California raisin crop first equaled that of Spain, and it has been increasing the difference ever since.

TWELVE COUNTIES WHERE CALIFORNIA RAISINS ARE PRODUCED.

County.	Crop of 1909—pounds.
Fresno	83,404,000
Tulare	20,000,000
Kings	18,000,000
Sutter	4,500,000
San Bernardino	3,600,000
San Diego	3,200,000
Madera	2,400,000
Yolo	2,000,000
Kern	1,100,000
Colusa	900,000
Los Angeles	600,000
Riverside	296,000
Total crop	140,000,000

SEEDED RAISINS.

Fresno County is the center of the seeded raisin industry, where it originated. The following figures show the wonderful increase in this popular form of raisin during the last fourteen years:

	Tons.		Tons.
1896	700	1903	18,000
1897	3,500	1904	18,000
1898	7,000	1905	21,000
1899	12,000	1906	24,000
1900	14,000	1907	26,000
1901	14,000	1908	24,000
1902	16,000	1909	28,000

(The above are only approximate figures.)

Wine and Brandy. The aggregate wine and brandy production for 1910, with an excess of 500,000 gallons in case of dry wine and of 500,000 gallons in case of brandy, was more than for 1909, which exceeded all previous years.

The production in 1909 of sweet wine was the greatest in the history of the industry by 2,500,000 gallons, and 1910 kept pace with it. The output of dry wine was well above the normal by near 7,000,000 gallons.

The following table shows the product of wine and brandy for the last fourteen years:

Year	Dry Wines Gals.	Sweet Wines Gals.	Brandy Gals.
1897	28,736,400	5,197,500	1,442,468
1898	10,750,000	7,779,000	1,250,000
1899	15,103,000	8,330,000	1,699,035
1900	16,737,260	6,940,300	3,256,513
1901	16,473,731	6,270,300	1,688,482
1902	28,224,146	14,835,146	4,564,173
1903	21,900,500	12,670,356	1,972,000
1904	15,589,342	13,571,856	4,420,839
1905	20,000,000	10,700,000	1,250,000
1906	26,000,000	15,000,000	1,345,000
1907	27,500,500	15,500,000	1,500,000
1908	22,500,000	14,750,000	1,750,000
1909	27,000,000	18,000,000	2,000,000
1910	27,500,000	18,000,000	2,500,000

After 1904 brandy used in fortifying sweet wines was excluded.

California wines have a wide and growing market. The railroad shipments on another page go mainly to Eastern points, while those by sea go to the four quarters of the world.

In this connection the following exhibit from the "Wine and Spirit Review" is of interest:

CALIFORNIA DEVELOPMENT BOARD.

EXPORT OF WINE BY SEA.

Year	Gallons	Value	No. of Countries Receiving
1908	4,250,799	\$1,657,089	12
1909	7,440,294	2,386,111	23
1910	9,866,539	3,162,600	26

FRESH AND CANNED VEGETABLES.

Fresh vegetables shipped out of the State by rail and sea amounted to nearly 9,000 carloads of ten tons each, for the year. The vegetables grown in the central and northern parts of the State, with the exception of asparagus, are mainly consumed in the home market, and shipments for 1909 were largely from the southern portion. Shipments from south of Tehachapi, which are included in the table of shipments for the State, are reported as follows by the Los Angeles Chamber of Commerce:

Kinds.	Value.
Cabbage	\$ 125,000
Cauliflower	170,000
Celery	600,000
Lettuce	15,000
Potatoes	265,000
Tomatoes	120,000
Onions	215,000
Miscellaneous	225,000
	\$1,735,000
Melons and Cantaloupes	1,000,000
Total	\$2,735,000

The year 1910 fell short in melon shipments and returns to the growers owing to a bad year and heavy competition. The returns were about half of those for 1909.

From the "California Fruit Grower" the following exhibit shows the kinds of vegetables canned in 1908 and 1909:

Vegetables—	Cases 1908		Cases 1909		Cases 1910	
	Nos. 2½ and 3, etc. (all grades)	No. 8 (gallons) (all grades)	Nos. 2½ and 3, etc. (all grades)	No. 8 (gallons) (all grades)	Nos. 2½ and 3, etc. (all grades)	No. 8 (gallons) (all grades)
Asparagus	238,085	335	410,335	630	614,050	3,225
Beans	38,610	1,155	10,490	1,495	41,610	4,640
Peas	81,770	6,740	88,360	15,650	140,855	26,920
Tomatoes	1,014,200	92,675	567,300	104,960	1,159,875	190,435
Other vegetables	21,780	6,535	38,350	4,700	49,075	19,960
Total vegetables (cases)	1,394,445	107,440	1,114,835	127,885	2,005,465	245,180
Grand total vegetables		1,501,885		1,242,720		2,250,645

The fresh asparagus shipped to Eastern points is mainly from the "Delta Region" of Central California.

FRESH FRUITS AND VEGETABLES.

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

Olives, Olive Oil, etc. Olive culture is one of the oldest fruit industries in the State. The first orchard was planted in San Diego in 1769, and that county is a large producer of olives and olive oil. There are large orchards in other counties, and every year adds to the number of trees. There are thirty-eight counties reporting over 1,000 trees each, ranging from Shasta on the north to the Mexican line on the south. The number of trees, as reported by the State Board of Equalization, is about 1,200,000 in bearing. Los Angeles leads with 320,800 bearing trees.

Statistics of this industry are difficult to obtain. It has not heretofore been very attractive from a remunerative point of view, but the removal of competition with adulterated oil by the Pure Food regulations has given it quite an impetus. Estimates of the production for 1910 range from 750,000 to 900,000 gallons of olive oil, and from 1,000,000 to 1,250,000 gallons of pickled olives.

Honey. While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the San Joaquin Valley and the counties south. The crop for 1909 was the record crop and nearly double the average.

CALIFORNIA HONEY CROP. (Comb and Extracted.)

The estimates of the honey product for several years are:

Year.	Pounds.	Year.	Pounds.
1899.....	2,822,000	1905.....	9,500,000
1900.....	2,208,000	1906.....	5,250,000
1901.....	8,112,000	1907.....	8,700,000
1902.....	5,125,000	1908.....	5,250,000
1903.....	8,400,000	1909.....	11,532,000
1904.....	7,000,000	1910.....	5,500,000

Silk. The culture of silk, which attracts little attention, is increasing slowly in California, and though not yet on a commercial basis is likely to become a good industry. The climate in California is admitted to be adapted to the raising of silk. The season for production extends over a period of six or eight months, while in Europe it lasts only as many weeks.

Nuts. The production of almonds fluctuates greatly and the crop for 1909, though much less than that of 1908, was still above the average. The production of walnuts is more regular, and the crop for the year gave good returns.

ALMONDS AND WALNUTS.

Year	Almonds	Walnuts
	Tons (2,000 lbs.)	
1895.....	825	2310
1896.....	1605	4115
1897.....	2375	3985
1898.....	450	5650
1899.....	2320	5530
1900.....	2740	5430
1901.....	1560	6910
1902.....	3270	8520
1903.....	3200	5500
1904.....	800	7590
1905.....	2125	5750
1906.....	900	6125
1907.....	750	8250
1908.....	3000	8000
1909.....	1650	7500
1910.....	2750	8500

At an average value of \$300 per ton, the aggregate of these crops is \$3,375,000.

DAIRY INDUSTRY.

The dairy industry is year by year more extended and important. Comparative statistics of butter production of the State for a series of years beginning with 1896 show the importance of this industry, and yet the supply falls so far short of the demand as to necessitate the bringing in of large quantities of butter from other States.

The season, as covered by the report of the State Dairy Bureau, ends September 30th of each year.

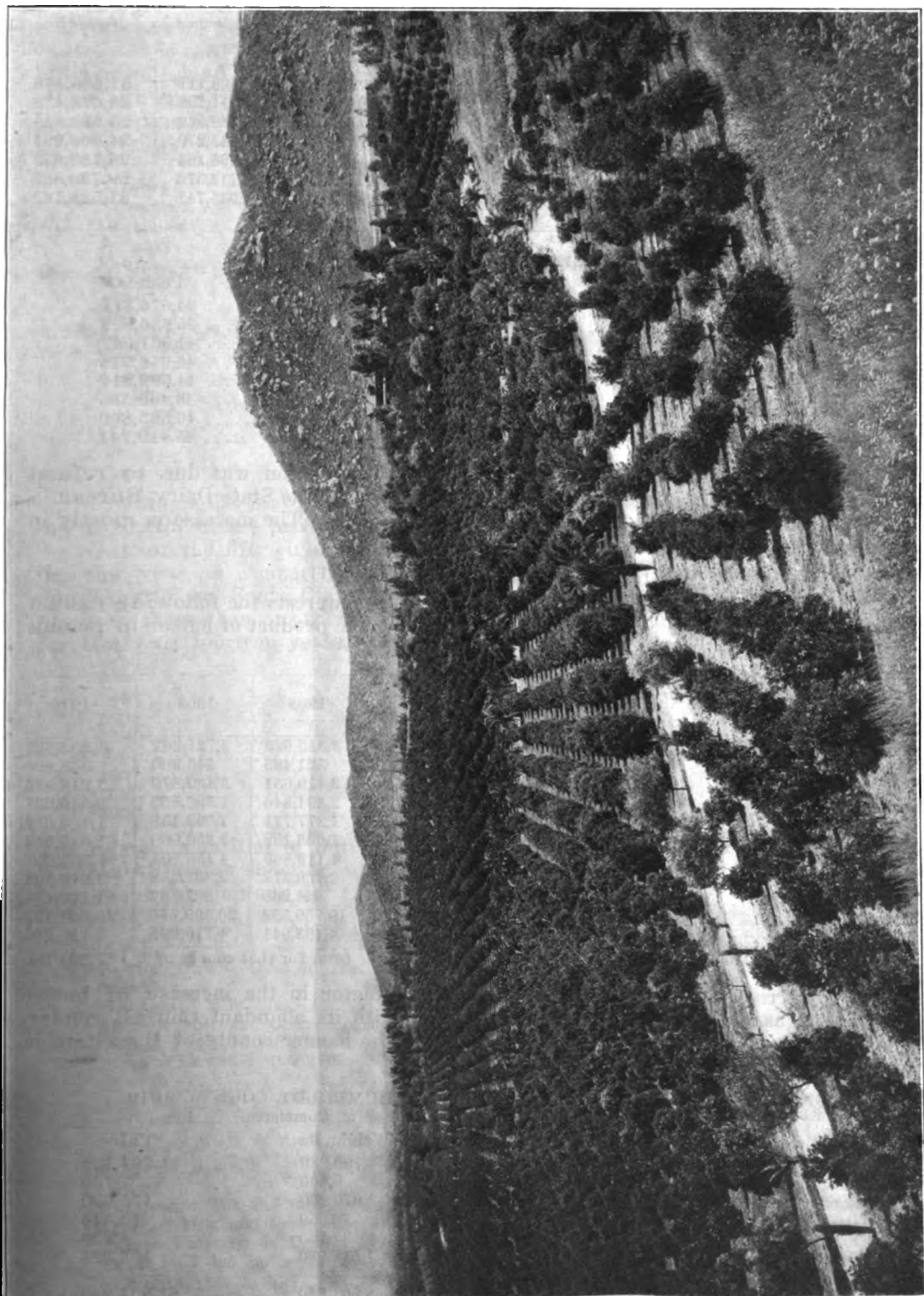
Despite the persistent efforts of that bureau some creameries and large producers in a number of counties failed to make any report of their production for the year 1910.

The figures gathered by the Bureau have been supplemented by returns made to this Board from other reliable sources, but the total production given for the year probably falls short of the actual output.

Scientific Dairying. Scientific dairying has largely superseded the old methods in California, as the following table, showing the number of pounds of butter produced in the State by the creamery method and the old method for seven years ending October 1, 1902, demonstrates:



THOROUGHBRED DAIRY HERD.



A CALIFORNIA ORANGE GROVE.

Year	Creamery Method	Old Method	Totals
1896	10,097,323	21,508,117	31,605,440
1897	10,866,646	17,811,793	28,678,439
1898	10,410,479	13,280,549	23,691,028
1899	12,725,814	12,143,270	24,869,084
1900	16,486,695	12,296,164	28,782,859
1901	19,017,512	10,713,370	29,730,882
1902	21,593,021	9,935,741	31,528,763

Since 1902 the growth is indicated in the following exhibit:

Year.	Pounds.
1903	34,676,311
1904	35,636,909
1905	41,961,047
1906	44,044,578
1907	44,599,211
1908	48,469,585
1909	49,595,869
1910 (Reported by State Dairy Bureau)	45,819,741

The apparent falling off in butter and cheese production was due to refusal or negligence on part of the producers to make report to the State Dairy Bureau.

California is now well to the front as a dairy State. The increase is mostly in counties where irrigation is practiced.

IRRIGATION AND DAIRYING.

As showing the effect of irrigation on the dairy interests the following exhibit from the reports of the State Dairy Bureau, giving the product of butter in pounds by principal counties, is instructive:

Counties	1905	1906	1907	1908	1909	1910
Fresno	1,619,746	2,446,897	2,786,817	3,315,926	3,721,262	3,290,825
Kern	200,936	334,070	372,569	521,495	545,900	565,900
Kings	1,099,400	1,677,272	1,960,364	2,419,651	3,432,879	3,218,036
Merced	1,563,771	2,361,528	2,469,726	2,831,846	1,396,865	2,510,269
Sacramento	1,508,293	1,617,633	1,060,098	1,277,771	1,592,138	1,102,012
San Joaquin	1,015,568	1,641,374	1,625,538	1,605,152	2,350,000	1,425,543
Stanislaus	1,564,749	2,759,582	3,615,469	4,113,866	4,155,701	*4,363,296
Tulare	1,497,762	2,075,729	2,522,707	2,729,377	2,307,238	3,072,198
Yolo	831,185	1,387,210	726,532	944,268	807,787	1,103,114
Totals	10,901,410	16,499,295	17,139,820	19,759,352	20,309,770	20,651,193
Humboldt (non-irrig.)	4,289,739	4,235,927	4,390,815	4,495,041	4,715,998	4,790,280

*A statistician employed by Stanislaus Board of Trade makes the total for that county of 6,187,204 lbs.

While irrigation has been a most important factor in the increase of butter production, as shown above, Humboldt County, with its abundant rainfall rendering irrigation unnecessary, claims the position of the banner county of the State in dairy products, as shown by the appended table:

SHIPMENTS OF DAIRY PRODUCTS FROM HUMBOLDT COUNTY 1910. (From records of the Humboldt Chamber of Commerce.)

Article	Weight, lbs.	Value
Butter	4,790,280	\$1,504,135
Cheese	9,600	1,750
Condensed Milk	2,079,200	175,000
Dry Milk	70,050	13,510
Fresh Cream	33,760	4,220
Casein	1,518,990	106,325
Totals	8,501,880	\$1,804,940
Home consumption butter, (34,000 population)	1,750,000	\$ 650,000

A comparatively new branch of the dairy industry is the production of commercial casein. It is now produced extensively in the northern counties of the State. It is used as a sizing in making high-grades of paper, also for piano keys, billiard balls, and everywhere that ivory can be used.

Following are the monthly receipts of butter in San Francisco for the two years ending September 31, 1910:

Month	1908-1909 Pounds	1909-1910 Pounds
October	811,000	834,700
November	757,600	691,300
December	931,400	889,600
January	913,100	802,300
February	1,001,300	916,100
March	1,805,000	1,548,600
April	1,848,300	1,704,100
May	1,819,400	1,667,800
June	1,773,400	1,705,300
July	919,000	1,096,700
August	875,500	1,002,300
September	873,000	1,075,400
Totals	14,328,000	13,934,200

CHEESE PRODUCTION.

Although the State has nearly doubled in butter production in ten years ending 1910, the cheese production has not kept pace therewith.

Out of the fifty-eight counties in the State, twenty-eight produced cheese during the year, as compared with twenty-four during the previous year. Monterey, Sacramento and Santa Clara, in the order named, are the leading counties, and produce more than one-third of the total output of the State. Comparing the totals for the past fourteen years, we have the following:

Year.	Pounds.	Year.	Pounds.
1897	6,399,625	1904	6,133,898
1898	5,148,372	1905	6,020,672
1899	5,294,938	1906	6,418,480
1900	4,989,960	1907	5,928,942
1901	5,681,366	1908	6,162,514
1902	6,503,441	1909	5,931,194
1903	7,218,639	1910	4,648,348

Large quantities of butter and cheese continue to come from the East, notwithstanding the superior advantages presented in this State for enlarging this branch of farming and for creamery development.

ANNUAL VALUE OF DAIRY PRODUCTS.

1909			
Butter	43,899,018 lbs.		\$13,186,044
Cheese	4,431,194 lbs.		632,331
Condensed Milk	4,006,876 lbs.		360,618
Market Milk and Cream Consumed.....			9,025,000
Calves Produced on Dairies.....			1,800,000
Skim Milk and Butter Milk.....			1,316,970
Casein	582,910 lbs.		29,145
Total			\$26,350,108
1910			
Butter	45,989,140 lbs.		\$14,403,798
Cheese	4,648,348 lbs.		724,212
Condensed Milk and Powdered Milk.....	8,299,989 lbs.		756,599
Market Milk and Cream Consumed.....			9,050,000
Calves Produced on Dairies.....			1,850,000
Skim Milk and Butter Milk.....			1,400,000
Casein	1,310,000 lbs.		75,000
Total			\$28,259,609

POULTRY INDUSTRY.

Poultry raising in California is a profitable industry. In a more or less practical way it has been carried on in all parts of the State, but in Sonoma, Sacramento, Colusa, Humboldt and San Benito Counties, and to a less extent in some others, the latest scientific methods are generally practiced with gratifying results. The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally. The largest incubator factory in the world is in Petaluma and other places, the increase is not sufficient to meet the demands of the turns out about 100,000 chicks per month, and runs to full capacity most of the year.

The average chicken ranch near Petaluma consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1.00 per year.

Notwithstanding the remarkable development of the poultry business at Petaluma and other places, the increase is not sufficient to meet the demands of the market. The rapidly expanding population of the State requires the importation of several million dozen eggs each year from Eastern points, and there is no immediate prospect of the home supply overtaking the market. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County, and the market business done from that point, and its growth, is reflected in the following tables, which show a gain for 1910 over 1909, in egg shipments, of 138,734 dozen, and a falling off in poultry of 43,740 dozen.

SHIPMENTS OF EGGS AND POULTRY FROM PETALUMA.

Year.	Eggs, Dozen.	Poultry, Dozen.
1903	3,407,333	32,535
1904	3,493,321	33,286
1905	3,837,061	39,392
1906	4,334,321	39,938
1907	4,422,968	59,198
1908	5,312,804	83,136
1909	7,159,481	120,018
1910	7,288,215	76,278

The above figures represent actual shipments of eggs to market. It is but fair to say that over one and a quarter million dozen eggs are produced which are used for hatching and home consumption. These added to the above, bring the total production of the Petaluma district up to near eight and one-half million dozen, or over 100,000,000 eggs.

POULTRY PRODUCTION.

The daily food requirements for poultry in the Petaluma district for the year aggregated over 400 tons, or 800,000 pounds, of which wheat, corn, barley, bran, and middlings form the largest part, viz.: about 340 tons.

The monthly shipment of eggs and poultry from Petaluma for 1909 (as given by the Petaluma Poultry Journal) were:



THE HOMES OF ONE HUNDRED THOUSAND WHITE LEGHORN HENS. A TYPICAL PETALUMA POULTRY LANDSCAPE.
SHIPMENT OF EGGS AND POULTRY FROM PETALUMA, SONOMA
COUNTY, CALIFORNIA, FOR 1910.

Month	Eggs, Doz.	Poultry, Doz.
January	416,800	3,570
February	706,305	3,361
March	906,318	4,531
April	995,608	5,136
May	871,428	7,589
June	694,984	10,277
July	521,242	8,151
August	523,940	9,313
September	406,946	8,634
October	384,676	6,245
November	426,640	5,474
December	434,328	3,997
	<u>7,288,215</u>	<u>76,278</u>
Other points in Sonoma County	3,950,160	
Total other counties	24,529,705	
Total for the State	<u>35,768,075</u>	

Fishing Industry. Both the interior and the coastal waters of California abound in food and game fish, offering inducements both to the pleasure-seeker and the profit-earner.

There are about 165 species of cold-water fauna whose proper home is north of Point Conception, and 117 species of semi-tropical fauna found south of Point Conception, beyond the reach of the cold currents of the north.

Of these, one hundred and thirty-three varieties of food fish are found in the San Francisco markets, including oysters and shell fish.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento Basin. Through the work of the Federal and State Commissioners, however, the rivers have been restocked and now there are more salmon in the Sacramento River than ever before.

The State maintains seven hatcheries, at one of which, the Sisson hatchery, more salmon fry are hatched than at any other hatchery in the world. There is also one hatchery and two egg-collecting stations under Federal supervision. Some 30,762,000 fry of various kinds of food and game fishes were deposited in the streams in 1910. Over 30,000,000 pounds of the fish taken for the market are caught in the waters of the bay counties and the Sacramento River.

Besides her home fisheries, packing salmon in Alaskan waters and Puget Sound employs over thirty San Francisco vessels, many men and a large amount of California capital. The following tables show California's share of the industry, which is very large:

PACIFIC COAST FISHING INDUSTRY.

Extent of Industry.	California.	Grand Total.
Capital employed	\$2,843,000	\$28,238,272
Number persons employed.....	4,129	58,826
Earnings of labor employed.....	\$1,356,890	\$17,901,795
Value of output.....	2,861,632	39,706,490

SPECIFIED PRODUCTS AND VALUES OF CALIFORNIA WATERS NET TO PRODUCER.

Products.	Quantity.	Value.
Canned salmon (cases).....	14,016	\$ 77,088
Fresh Salmon (lbs.).....	4,884,800	350,787
Mild Cured Salmon (tierces).....	5,591	503,190
Frozen Salmon (lbs.).....	1,800,000	72,000
Oysters and Shell Fish (lbs.).....	3,692,000	428,800
Whale Products, Oil, Guano, etc.....		131,870
Fishes Not Mentioned Above.....	25,804,100	1,297,900
Total Value		\$2,861,632

This includes 5,591 tierces of mild cured salmon mostly taken in San Francisco Bay and its tributaries.

Canned salmon and other fisheries products are sent by sea from San Francisco to nearly every country in the world. Shipments during 1910 were as follows:

	Quantity. (Pounds.)	Value.
Canned Salmon and other Salmon.....	25,924,442	\$2,701,824
Other Fish and Fish Products.....		367,000

The Alaska Packer Association report their pack for 1910 as 971,716 cases, besides over 4,000 barrels of salt salmon.

Domestic exports of canned salmon from San Francisco since completion of 1910 pack, October, November and December, amounted to 20,301,120 pounds, valued at \$2,036,830.

The codfish fleet of San Francisco, comprising sixteen vessels, took during the year 1910, 1,520,000 fish.

Farm Animals. The following statistics, taken from the "Crop Reporter" of the Department of Agriculture, for farm animals in California, show the number, average value of the different animals, and the total value. The tables for 1910 as compared with 1909 show a decrease in total number of animals, but an increase in value of all, which makes a total gain of \$15,944,000.

The number of sheep is still less than the average of previous years. This is ascribed to the extension of the forest reserve and restrictions of grazing areas. About 50,000 head of cattle, 150,000 sheep, and 50,000 hogs are slaughtered for market in the State each month, a part of which come from adjoining States. Enlarged outside markets and increasing home demand augur well for the future of the stock-growing industry.

December 31, 1907.				December 31, 1908.		
Kinds.	Number.	Average Price.	Value.	Number.	Average Price.	Value.
Horses	396,000	\$ 94.00	\$37,244,000	412,000	\$ 90.00	\$37,080,000
Mules	82,000	113.00	9,266,000	83,000	107.00	8,881,000
Milch Cows	410,000	36.00	14,760,000	430,000	36.00	15,480,000
Other Cattle	1,155,000	19.00	21,945,000	1,155,000	17.50	20,212,000
Sheep	2,422,000	3.47	8,404,000	2,325,000	2.80	6,510,000
Swine	551,000	7.20	3,967,000	562,000	6.50	3,653,000
Total	5,016,000	....	\$95,566,000	4,967,000	....	\$91,816,000

December 31, 1909.				December 31, 1910.		
Kinds.	Number.	Average Price.	Value.	Number.	Average Price.	Value.
Horses	420,000	\$105.00	\$44,100,000	425,000	\$117.00	\$49,725,000
Mules	83,000	122.00	10,126,000	80,000	133.00	10,640,000
Milch Cows	452,000	38.40	17,357,000	500,000	48.00	24,000,000
Other Cattle	1,120,000	20.10	22,512,000	1,100,000	23.50	25,850,000
Sheep	2,372,000	3.30	7,828,000	2,200,000	3.90	8,580,000
Swine	540,000	8.20	4,428,000	500,000	7.20	3,600,000
Total	4,987,000	....	\$106,351,000	4,805,000	....	\$122,395,000

Wool. The wool clip for 1910, as given by Mr. E. H. Tryon of San Francisco and others, shows some decrease from that of 1909 and less than half of what it was for many years previous to 1895. It has gradually declined in quantity during the last ten years, and for 1907-08 is below that of any previous clips for thirty years.

WOOL PRODUCTION OF CALIFORNIA, 1854-1910.

Year.	Pounds.	Year.	Pounds.	Year.	Pounds.
1854	175,000	1873	32,155,169	1892	35,802,930
1855	300,000	1874	39,356,781	1893	33,169,375
1856	600,000	1875	43,532,223	1894	36,968,400
1857	1,100,000	1876	56,550,973	1895	35,856,690
1858	1,428,000	1877	53,110,742	1896	27,195,550
1859	2,378,000	1878	40,862,091	1897	34,882,325
1860	3,055,327	1879	46,903,360	1898	28,063,240
1861	3,721,998	1880	46,074,154	1899	28,332,090
1862	5,990,300	1881	45,076,639	1900	27,750,000
1863	6,268,480	1882	40,529,119	1901	26,900,000
1864	7,923,670	1883	40,848,690	1902	21,000,000
1865	8,949,931	1884	37,415,330	1903	22,000,000
1866	8,532,047	1885	36,561,390	1904	22,000,000
1867	10,288,600	1886	38,509,160	1905	22,000,000
1868	14,232,687	1887	31,564,231	1906	24,000,000
1869	15,413,970	1888	32,569,972	1907	15,000,000
1870	20,072,660	1889	34,008,370	1908	15,000,000
1871	22,187,188	1890	34,854,640	1909	16,000,000
1872	24,255,468	1891	33,183,475	1910	15,500,000

Note.—"Pulled" wool, 4,700,000 pounds, not included in table.

FIELD CROPS.

Grain. The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1898 and of rye since 1907:

Year	Wheat Bushels 60 lbs.	Barley Bushels 48 lbs.	Corn Bushels 56 lbs.	Oats Bushels 32 lbs.	Rye Bushels 60 lbs.
1898.....	12,403,700	12,263,461	1,184,040	1,943,304	.....
1899.....	29,666,666	14,046,087	1,536,975	1,845,787	.....
1900.....	20,933,333	19,769,760	1,351,975	1,477,771	.....
1901.....	28,751,500	26,162,780	1,850,793	4,887,374	.....
1902.....	18,759,490	23,489,065	1,839,150	5,148,583	.....
1903.....	14,880,990	21,075,000	1,777,162	5,756,964	.....
1904.....	10,895,216	24,418,604	1,350,000	5,250,000	.....
1905.....	5,660,360	22,094,186	1,204,000	4,735,000	.....
1906.....	8,333,330	26,162,790	1,100,000	4,300,000	.....
1907.....	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908.....	11,680,000	25,427,000	1,600,000	6,700,000	792,000
1909.....	11,550,000	31,270,000	1,740,000	6,280,000	842,000
1910.....	17,100,000	43,400,000	1,838,000	8,325,000	986,000

Grain Crops. The yield and values of the cereal crops sown for the harvest of 1910, as given by the Department of Agriculture, are as follows:

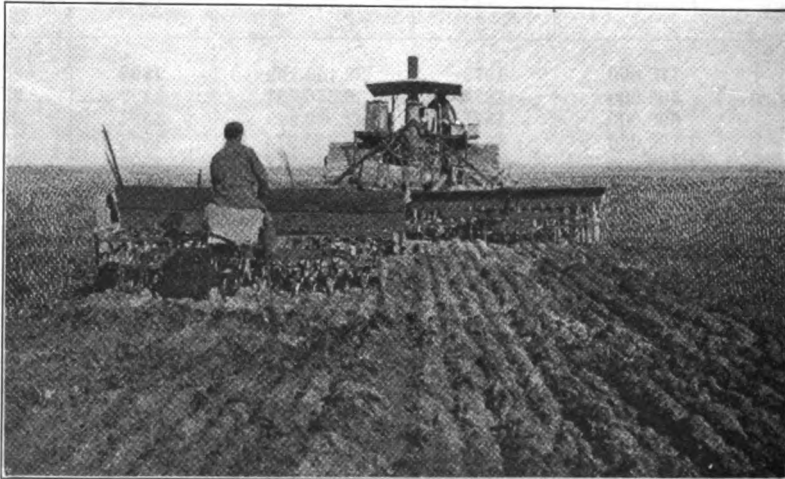
REPORT OF CROPS FOR 1910.

	Bushels.	Value.
Wheat	17,100,000	\$16,074,000
Barley	43,400,000	23,870,000
Oats	8,325,000	4,162,000
Rye	986,000	848,000
Corn	1,838,000	1,470,000
		\$46,424,000

It appears from department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley, which now equals in acreage and exceeds in yield and value all the other grain crops combined.

In the seven years ended in 1906, according to the Year Book of the Department of Agriculture, the acreage in barley increased 60 per cent, the yield 160 per cent, and the value 230 per cent. The malting qualities of California barley give it a ready market abroad.

Oats are raised, in some parts of the State, more for hay than for threshing, while corn is but little used as food for work animals. Barley has long been the main grain food in California, but of late years oats have come into use to quite an extent.



PLOWING AND SEEDING WITH TRACTION ENGINE.

HAY AND FORAGE CROP.

The hay crop of California is one of the most valuable agricultural products, being each year since 1905 worth over \$31,600,000. Alfalfa is increasing yearly in acreage and value. From three to five cuttings may be made yearly on irrigated ground, with an aggregate yield of from four to eight tons to the acre.

California grain (cut in the milk) is highly prized for hay and is sent East by the train-load for feeding race-horses.

Estimates based on returns made by the county statisticians and others give the yield and value of the hay crop since 1905, as shown below:

	Yield, Tons.	Value.
1905	3,697,373	\$31,687,180.
1906	4,113,178	32,290,760
1907	4,009,054	32,072,959
1908 (Grain and grass, hay and alfalfa)	3,142,962	32,229,803
1909 (Grain and grass, hay and alfalfa)	3,857,315	36,644,973
1910 (Grain and grass, hay and alfalfa)	3,786,250	36,148,000

Returns of county assessors to the State Board of Equalization credit the various counties with 374,258 acres of standing alfalfa, which at six tons from the several cuttings would yield 2,245,548 tons, which at the farm value used by the Department of Agriculture, \$9.60 per ton, would be worth \$21,457,260.

Beans and Other Field Crops. California is famous for the production of dried beans, onions, potatoes, etc., and they add much to the resources of the State. From the "Crop Reporter" and leading authorities in handling these products the following figures are obtained of product and values for 1910:

Product.	Quantity.	Farm Value at Harvest Time.
Lima Beans	1,200,000 sacks	\$4,560,000
Pink Beans	270,000 "	1,225,000
Small White Beans	300,000 "	855,000
Other varieties	885,000 "	3,196,000
Total Beans	2,655,000 "	\$9,836,000
Sugar Beets	997,220 tons	4,496,297
Onions	2,352,000 sacks	3,428,000
Potatoes, Irish	8,060,000 bushels	6,840,000
Potatoes, Sweet	450,000 "	420,000
Field and Garden Seeds .....	.....	2,265,000
Total value		\$27,285,297

Hop Crop. The hop crop in California, as elsewhere, varies greatly from year to year, influenced mainly by market prospects. The crop for 1910, according to statistics furnished the California Development Board, was 71,511 bales of 185 pounds each, or 13,299,535 pounds. Sonoma and Sacramento counties lead in the production.

HOP PRODUCTION IN CALIFORNIA, 1889-1910.

Year	Bales	Pounds	Year	Bales	Pounds
1889	35,230	6,517,550	1900	38,000	7,220,000
1890	28,130	5,204,050	1901	48,000	9,120,000
1891	36,151	6,687,935	1902	53,500	10,165,000
1892	39,800	7,363,000	1903	57,000	10,545,000
1893	51,400	9,509,000	1904	63,000	11,655,000
1894	67,500	12,287,500	1905 .....	.....	13,135,000
1895	52,000	9,620,000	1906	108,000	20,000,000
1896	35,000	6,475,000	1907	90,000	16,650,000
1897	45,000	8,325,000	1908	63,200	11,692,000
1898	44,000	8,140,000	1909	69,688	12,892,280
1899	59,000	11,210,000	1910	71,511	13,229,535

Beet Sugar. The beet-sugar industry of the State grows yearly in importance. In 1909 California produced over 28 per cent of the total product of the United States, and was second only to Colorado in output. In 1910 with an increased acreage and very favorable growing conditions she surpassed all her previous records and took the first place, with a production of 144,746.7 tons. Michigan, her nearest competitor, follows with 112,100 tons, and Colorado, the late leader, comes third with 98,560 tons. The beet-sugar production of the whole United States for 1910 was 498,400 tons, of which California produced nearly 30 per cent.

The existing factories and their locations are as follows:

Spreckels Sugar Co., Spreckels, Monterey County.
 Spreckels Sugar Co., Watsonville, Santa Cruz County.
 American Beet Sugar Co., Oxnard, Ventura County.
 American Beet Sugar Co., Chino, San Bernardino County.
 Alameda Sugar Company, Alvarado, Alameda County.
 Union Sugar Co., Betteravia, Santa Barbara County.
 Los Alamitos Sugar Co., Los Alamitos, Orange County.
 Southern California Sugar Co., Santa Ana, Orange County.
 Sacramento Valley Sugar Co., Hamilton, Glenn County.
 Pacific Sugar Co., Visalia, Tulare County.
 Pacific Sugar Co., Corcoran, Kings County.

The plants at Watsonville and the plants of the Pacific Sugar Company at Visalia and Corcoran were not operated during 1910, while one new plant was added to the active list, that of the Southern California Sugar Company at Santa Ana, in which vicinity two more plants will operate from now on in Los Angeles County.

The output of the nine active plants was 2,894,934 pounds, which at four cents per pound represents \$11,579,736.

California was the pioneer in the beet-sugar industry of the country. The first plant operated in the United States was the one at Alvarado, Alameda County.

The plant at Spreckels in Monterey County is the largest beet-sugar factory in the world.

The average yield of sugar beets per acre and the average percentage of sugar in California beets is greater than in Colorado or Michigan. In some parts of California the soil and climatic conditions are superior for the cultivation of sugar beets. The large average percentage of sunlight is probably the main factor in the results obtained.

The growth of the industry in California is shown in the following exhibit for twenty-two years, beginning with 1888, that being the first year statistics were obtained and published by the State Board of Trade:

BEET SUGAR PRODUCTION OF CALIFORNIA.

Tons of 2,000 lbs.

Year.	Tons.	Year.	Tons.
1888	1,910	1900	30,319
1889	2,457	1901	68,700
1890	3,351	1902	73,761
1891	5,224	1903	65,360
1892	10,761	1904	59,147
1893	17,420	1905	64,251
1894	18,615	1906	94,285
1895	23,827	1907	72,889
1896	31,815	1908	99,613
1897	35,280	1909	126,621
1898	18,086	1910	144,747
1899	42,100		

Taken altogether, the industry is on a most satisfactory basis and bids fair to become one of the large money producers of the State.

Tobacco Growing. The adaptability of soil and climate to the growing of tobacco has been successfully demonstrated in many sections of the State, though it is not yet grown to any considerable extent.

Rice. From experiments made in the Sacramento Valley during recent years by the rice expert of the Department of Agriculture, the adaptability of soil and climate to the successful culture of rice has been demonstrated. Two tracts of twenty-five acres each were planted in 1908 in the vicinity of Biggs on black adobe lands. From one planting a yield of 3,000 pounds per acre was harvested. This rice was awarded the gold medal at the Seattle Exposition in 1909.

Plantings made in 1910 justified the expectations of those interested both as to yield and quality.

Cotton. The adaptability of soil and climate of California to the growing of cotton has been known for some years. Of late, planting has begun on a large scale and the acreage is increasing.

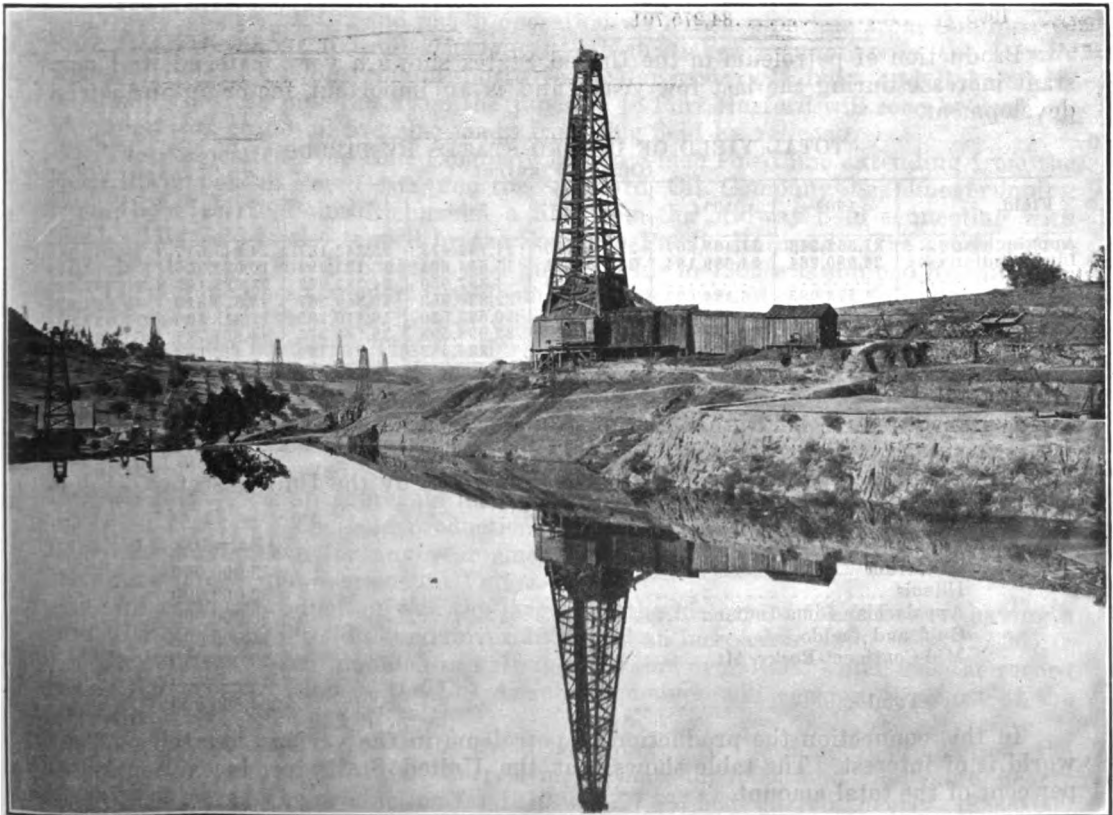
In 1909 over 500 acres were planted in the Imperial Valley, Imperial County, with seeds from Georgia and Texas. The result was most gratifying, an average of over one bale, 500 pounds, to the acre being produced, some 600 bales in all, most of which found a ready market at the California Cotton Mills in Oakland. In 1910 some 12,000 acres were cultivated, producing 8,000 bales of excellent staple. The new industry has called for the erection of eight gins besides one or more cotton-seed oil mills.

The cotton growing has proved a success also in the Coachella Valley and at Semi-Tropic in Kern County, and other places.

All the cotton produced in California will find a ready home market and probably cause additional factories to be added to the few already in operation in the State.

The Japanese are already in the field as buyers of California cotton.

Flax and Hemp. The culture of these valuable textile plants has lately received an impetus in several localities that promises important developments.



A "GUSHER" AND NATURAL RESERVOIR IN THE SANTA MARIA FIELD.

MINERAL PRODUCTION.

Petroleum. The production of petroleum in California by districts for 1910 was as follows:

District.	Barrels.
Kern River	14,776,435
McKittrick	5,471,613
Midway	11,174,207
Sunset	9,218,904
Coalinga	18,651,470
Watsonville	36,660
Arroyo Grande	22,310
Lompoc	698,210
Santa Maria	6,909,620
Summerland	74,725
Santa Paula	492,147
Newhall	160,428
Salt Lake	3,263,104
Los Angeles	466,514
Whittier-Coyote	1,198,260
Puente	38,960
Fullerton-Brea Cañon	5,044,001
Total	77,697,568

The output of petroleum in California for the years 1900 to 1910, inclusive, from private sources, is as follows:

Years.	Barrels.	Years.	Barrels.
1900	4,000,000	1906	32,516,600
1901	8,000,000	1907	40,101,360
1902	13,973,500	1908	48,300,758
1903	24,337,828	1909	58,191,723
1904	24,423,860	1910	77,697,568
1905	34,275,701		

Production of petroleum in the United States shows a very material and constant increase during the last few years, and is an important factor in industrial development.

TOTAL YIELD OF UNITED STATES BY FIELDS.
(Official Figures)

Field.	1903	1904	1905	1906	1907	1908	1909
Appalachian	31,558,248	31,408,567	29,366,960	27,741,472	25,342,137	24,945,517	26,535,844
Lima-Indiana	24,080,264	24,689,184	22,294,171	17,554,661	13,121,094	10,032,305	8,211,443
Illinois			181,084	4,397,050	24,281,973	33,685,106	30,898,839
Mid-Continent	1,573,085	6,186,629	12,535,777	22,838,553	46,846,267	48,323,810	49,804,922
Gulf	18,371,383	24,631,269	36,526,323	20,527,520	16,410,299	17,318,330	11,912,058
California	24,382,472	29,649,434	33,427,473	33,098,598	39,748,375	44,854,737	54,433,010
Other	495,885	515,877	385,792	336,082	345,190	412,674	338,658
Total	100,461,337	117,080,960	134,717,580	126,493,936	166,095,335	179,572,479	182,134,274

California easily holds the position of the largest producer in the United States, producing nearly 27 per cent of the total production.

The production for 1910, approximately, as given by the United States Geological Survey, by fields, is as follows:

Field.	Barrels.
California	73,000,000
Illinois	32,000,000
Appalachian-Lima-Indiana	32,000,000
Gulf and Caddo	14,000,000
Mid-Continent-Rocky Mt.	53,000,000
Total	204,000,000

In this connection the production of petroleum in the various countries of the world is of interest. The table shows that the United States produces nearly 64 per cent of the total amount.

WORLD'S PRODUCTION—1904 TO 1908.

(Barrels of 42 Gallons)

Country	1904	1905	1906	1907	1908	1909
United States	117,080,960	134,717,580	126,493,936	166,095,335	179,572,479	182,134,274
Russia	78,536,655	54,960,270	58,897,311	61,850,784	62,186,447	65,970,350
Sumatra, Java, Borneo	7,682,014	8,586,804	8,662,572	8,377,099	8,752,822	11,041,852
Galicia	5,947,383	5,765,317	5,467,967	8,465,841	12,612,295	14,932,799
Roumania	3,599,026	4,420,987	6,378,134	8,118,207	8,252,157	9,221,138
India	3,385,468	4,137,098	4,015,803	4,844,162	5,047,038	6,676,517
Japan	1,418,767	1,341,167	1,710,768	2,010,639	2,070,929	2,012,409
Mexico .....	.....	.....	.....	1,000,000	3,481,410	2,488,742
Canada	552,576	634,095	569,753	788,872	527,987	420,755
Germany	637,431	560,963	578,610	756,631	1,009,278	1,018,837
Peru	345,834	447,880	534,929	741,228	1,011,180	1,316,118
Italy	25,476	44,027	53,577	59,875	a60,000	a50,000
Other	a40,000	a30,000	a30,000	a30,000	a30,000	a30,000
	219,251,589	215,646,178	213,393,410	262,628,621	284,614,022	297,413,791

a Estimated.

The United States produces over 60 per cent of the total supply.

According to Bradstreet the oil companies of California have returned to the stockholders over \$60,000,000 in dividends in twenty years.

PIPE LINES.

To take care of California's great petroleum production a vast system of pipe lines has been constructed, a brief description of which may be of interest.

Four lines in operation are in the Coalinga field. The Standard Oil Company has two lines, one of 8-inch and one of 6-inch pipe, 133 miles in length, with terminals at Point Richmond on the Bay of San Francisco. The Associated Transportation Company has one 6-inch line in operation, 110 miles in length, with terminal at Monterey; also a line at Salinas, and another line of 8-inch rifled pipe in course of construction, which will be 198 miles long when completed, from Coalinga to the terminal at Port Costa. The Producers' Transportation Company has just completed (March, 1910) and put in operation an 8-inch pipe line from Coalinga to Port Harford, about 100 miles in length, which makes a junction in the Devil's Den District with a line coming north from McKittrick, Midway and Bakersfield. It is said that the pipe line from the junction to Port Harford will soon be doubled. Shipments of crude oil are also made from this field by railroad.

The Associated Pipe Line Company has an 8-inch rifled line extending from the Kern River field to Port Costa, and the Standard Oil Company has lines running from this field to Point Richmond, a line from the Midway field connecting with them. The field is also tapped by the Southern Pacific Railroad. The crude petroleum produced in the McKittrick and Sunset fields in 1909 was shipped by rail.

Three pipe lines transport petroleum from the Santa Maria oil field. The Union Oil Company has two lines, one of 6-inch and one of 8-inch pipe, from Orcutt and Lompoc to Port Harford. The Standard Oil Company has an 8-inch line to Port Harford and the Associated Transportation Company has an 8-inch line to Gaviota. Shipments are also made from this field by rail from Careaga and Orcutt.

Other Mineral Output, 1909. The usual comparative tables furnished by the State Mineralogist are presented, showing the mineral output for a series of years. There was an aggregate increase in value of over \$16,509,059.

The gold production was more than \$200,000 greater than for 1908 and larger than for any year since 1883. This increase was due to the dredging operations in the Sacramento Valley.

The copper production was the largest in the history of the industry, having a gain of nearly 15,000,000 pounds over 1908, and an increase in value of \$3,127,365.

Cement more than doubled in output and value over 1908, which was the record year. The construction of the Los Angeles aqueduct will account for most of the increase.

Petroleum, however, was the great contributor to the mineral production, the output being nearly 10,000,000 barrels more than in 1908, and the value nearly \$6,000,000 more. The production for 1910 was 77,697,568 barrels, nearly 12,000,000 more than for 1909.



THE BACHELOR AND THREE GRACES, MARIPOSA GROVE.



AN ASPARAGUS FIELD, DELTA DISTRICT.

MINERAL PRODUCTION.

47

MINERAL PRODUCTION OF CALIFORNIA FOR SIX YEARS.

On Authority of Lewis E. Aubrey, State Mineralogist

PRODUCTS	1904		1905		1906		1907		1908		1909	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Asbestos.....tons	10	\$162	112	\$2,625	70	\$3,500	70	\$3,500	70	\$3,500	65	\$3,500
Asphalt.....tons	56,187	673,910	40,304	285,390	77,756	777,560	79,718	1,058,400	105,448	1,082,326	136,644	1,707,159
Bituminous Rock.....tons	45,380	175,680	24,783	80,436	15,077	45,204	24,132	72,335	30,718	109,818	34,123	116,436
Borax (Crude).....lbs.	91,284,000	698,810	92,668,000	1,019,158	116,346,000	1,192,410	106,246,000	1,200,913	44,400,000	1,177,000	32,257,000	1,183,960
Cement.....bbls.	968,638	1,589,800	1,565,968	1,791,918	1,286,000	1,941,260	1,813,583	2,586,677	1,629,616	2,359,682	3,779,205	4,968,437
Chromite.....tons	128	1,845	40	600	317	2,869	332	6,040	350	6,196	436	6,309
Clays (Brick).....M	281,750	1,994,740	286,618	2,273,786	277,762	2,538,848	362,187	3,438,951	382,872	2,606,495	333,846	3,059,929
Clays (Pottery).....tons	84,149	81,952	138,805	180,146	167,367	192,288	160,385	254,454	208,042	325,147	239,424	465,647
Coal.....tons	79,063	376,494	46,500	144,500	24,350	61,600	23,754	56,849	18,496	55,503	49,389	216,913
Copper.....lbs.	29,974,152	8,669,995	16,997,489	2,650,805	28,726,448	5,523,712	32,402,945	6,341,387	40,868,772	5,350,777	65,727,736	8,478,142
Fall's Earth.....tons	500	9,500	13,344	18,000	440	10,500	100	1,000	50	1,000	459	7,385
Gems.....		71,000		148,500		497,090		232,642		208,950		193,700
Gold.....ozs.		19,109,600		19,197,048		18,723,452		16,727,928		18,761,559		20,237,870
Granite.....cu. ft.	520,687	467,472	228,788	853,887	329,310	844,088	399,431	373,376	483,374	512,923	358,008	376,834
Gypsum.....tons	8,350	56,592	12,850	64,500	21,000	69,000	8,900	57,700	34,600	155,400	30,700	138,176
Infusorial Earth.....tons	6,950	112,282	8,000	15,000	2,480	14,400	2,581	28,948	2,950	32,012	500	3,500
Iron Ore.....tons	62	5,270	267	25,058	169	19,807	164	16,650	562	46,663	108	124
Lead.....tons		658,956		878,647		935,887		756,376		379,243		144,397
Limestone.....tons												
Limestone.....tons	532,690	414,668	1,440,455	942,508	1,066,164	870,887	1,544,617	1,082,302	2,939,901	2,446,783	3,567,120	419,921
Macedonia.....tons	2,850	9,298	3,988	16,231	4,082	40,820	6,406	57,729	10,582	80,822	7,942	62,588
Manganese.....tons	60	900				30	1	35	321	6,785	3	75
Marble.....cu. ft.	55,401	94,208	78,808	129,450	81,400	75,800	37,512	118,066	18,652	47,666	79,600	238,400
Mineral Paint.....tons	270	1,985	754	4,025	250	1,720	250	1,720	336	2,250	305	2,325
Mineral Water.....gals.	2,480,320	496,940	2,194,150	538,700	1,585,590	476,186	2,924,239	544,016	2,799,715	560,507	2,449,834	465,488
Natural Gas.....M cu. ft.	144,437	91,035	148,345	102,479	168,175	109,489	169,991	114,759	842,888	474,584	1,148,467	616,932
Paving Blocks.....M	3,377	161,752	3,408	134,347	4,203	172,432	4,604	199,347	7,660	334,780	4,603	199,802
Petroleum.....bbls.	29,786,008	8,317,809	34,275,701	9,007,820	32,624,000	9,238,020	40,311,171	16,783,943	48,806,910	26,666,181	58,191,723	32,398,187
Platinum.....ozs.		1,849	300	3,320	91,46	1,647	300,07	6,255	706	13,414	416	10,400
Prites.....tons	15,043	62,992	15,508	68,968	46,689	145,895	82,276	251,774	107,081	610,335	467,861	1,339,802
Pumice Stone.....tons												
Quartz Crystals.....lbs.	28,376	1,086,328	24,655	866,081	19,516	712,834	4,000	10,000	4,000	10,000	50	500
Quicksilver.....flasks	1,764,308	1,237,209	1,183,802	774,287	489,208	547,519	744,211	882,718	1,059,044	795,006	1,954,441	773,788
Salt.....tons	95,968	187,800	77,118	141,925	101,950	218,228	88,082	310,967	1,121,764	281,489	1,957,680	444,708
Sand (Glass).....tons	10,004	52,276	9,257	6,121	8,750	13,878	11,066	8,178	9,255	22,045	12,269	26,617
Sandstone.....cu. ft.	368,487	567,181	302,815	486,368	183,076	164,068	159,572	148,138	93,301	55,151	79,240	37,032
Serpentine.....cu. ft.	200	2,310	1,000		847	1,694	1,000	3,000				
Silver (Com'l value).....ozs.		878,525		678,494		817,880		751,846		373,057		1,091,092
Slates.....squares	6,000	50,000	4,000	40,000	10,000	100,000	7,000	60,000	6,000	50,000	6,961	45,660
Soda.....tons	12,000	18,000	15,000	22,500	12,000	18,000			9,600	14,400	7,712	11,593
Soapstone.....tons											33	280
Tungsten.....tons												
Zinc.....lbs.			52	18,800		189,100		120,687		37,750		190,500
						12,566		10,598		8,544		
Totals.....		\$43,630,633		\$43,065,497		\$46,776,085		\$55,697,545		\$66,363,150		\$82,972,209

* Crude. † 'Up to 1907 Lime and Limestone were reported under one head.

FOREST PRODUCTS.

The lumber cut of California for a series of years since 1880, as given by the U. S. Government reports, presents some interesting contrasts of amount of production.

LUMBER CUT IN CALIFORNIA FOR YEARS FROM 1880 TO 1910.

From Government Report.

	M. Feet.	Mill Value.
1880	304,795	
1890	515,823	
1900	734,232	
1905	1,077,499	
1906	1,348,599	
1907	1,345,943	\$23,640,966
1908	996,115	15,211,055
1909	1,144,000	17,160,000
1910 (estimated)	1,270,000	18,050,000

The cut for 1910, estimated from mill reports, cargo shipments and other sources of information, is also given.

The cut for 1910 as well as that for 1909, again largely exceeds that of 1908, which for a number of reasons fell far below the three preceding years.

KINDS OF LUMBER CUT IN CALIFORNIA IN 1910.

Quantities Approximated.

	Feet.
Redwood	600,000,000
Western Pine or White	350,000,000
Douglas Fir	110,000,000
Sugar Pine	100,000,000
White Fir	60,000,000
Spruce	30,000,000
Cedar	15,000,000
Western Hemlock	1,000,000
Oak	1,000,000
Ash and other	3,000,000
Total	1,270,000,000

In addition to the lumber cut as above, California produced about 530 million shingles and shakes, with a large number of poles, ties, etc.

The following estimate is given by the "Pacific Lumber Trade Journal" of January, 1907, as to the Pacific Coast States and Idaho, Montana and British Columbia:

	M. Board Feet.
Oregon	225,000,000
Washington	195,658,080
California	180,000,000
Idaho and Montana	100,000,000
British Columbia	150,000,000
Total	850,658,080

At the low estimate of \$3.00 per thousand feet for stumpage, the value of timber in California as it stands in the forest is \$540,000,000. This is a large sum, but is doubtless within the truth.

The estimated wooded area of California is 28,608,000 acres. Approximately 24,058,050 acres are in National forest reserves and 4,549,950 acres in private ownership or unreserved.

The conservation of the forest areas of California is most intimately related to the welfare of the State. No greater calamity could befall the State than the denudation of the wooded lands. On the other hand, incalculable benefit will come from wise conservation of the forests and a reforestation of the already denuded areas. Conservation of natural resources must of necessity include the forests and the streams. Happily a wise governmental policy has saved enough of these areas to give assurance that their relation to the common welfare will not be seriously impaired.

Redwood. It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "clear lumber." The redwood (*Sequoia Sempervirens*) is indigenous to California, and except for a few stunted trees in Japan, is found in no other country. This growth covers a tract on the northwestern coast of California, beginning at the northern line (there being not over 2,000 acres over the line in Oregon), and occupies a continuous district from the seacoast eastward to the crest of the Coast Range of mountains about 240 miles long (north and south) and from 10 to 20 miles wide.

In this district there were originally about 1,200,000 acres of redwood timbered lands, comprising practically the world's entire supply of this magnificent wood.

The mills have removed probably not more than 20 per cent of the original standing timber, having during the fifty years averaged 220,000,000 feet per annum. The cut since 1903 from this district (comprising the counties of Del Norte, Humboldt, Mendocino and Sonoma), has averaged nearly 400,000,000 feet.

The following figures give the annual shipments from the mills north of San Francisco Bay since and including 1900:

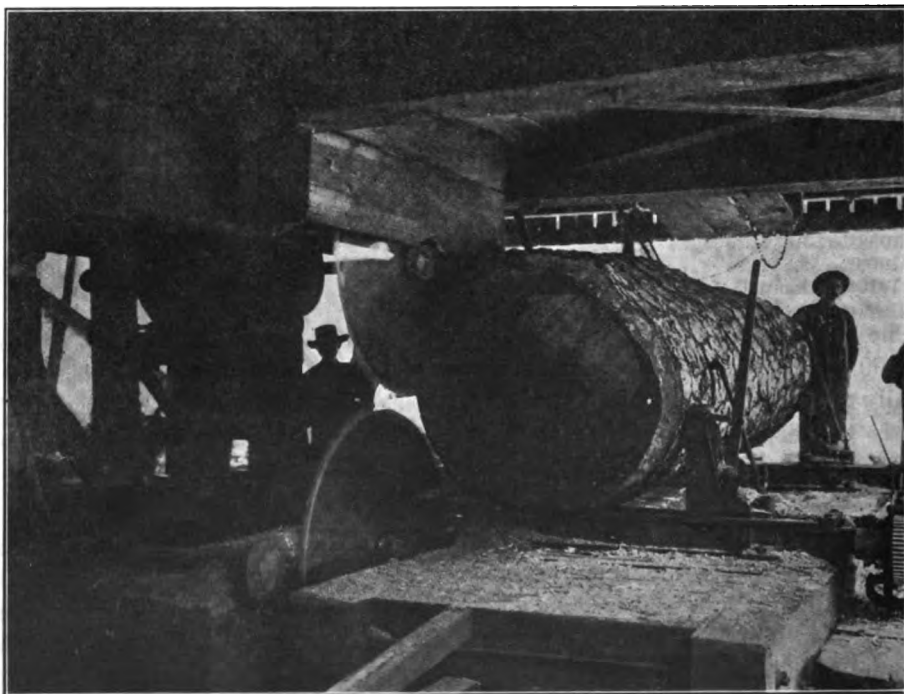
	Feet.
1900	209,001,022
1901	244,386,075
1902	262,597,015
1903	301,343,953
1904	324,676,960
1905	347,679,159
1906	409,702,573
1907	437,514,653
1908	356,549,880
1909	402,519,307
1910 (estimated)	450,000,000

The above figures do not represent the actual cut, as there is about 40,000,000 to 50,000,000 feet sold in the neighborhood of the mills and about 20,000,000 feet annually consumed in San Mateo and Santa Clara Counties that is cut there. Then there is to be added still the quantity consumed in making ties, laths, shingles, shakes, etc., which will not fall far short of 90,000,000 feet a year.

Pine. The Western slope of the Sierras in California, Arizona and in Oregon are covered with a mighty forest where the Sugar Pine, (*Pinus Lambertiana*), the White Pine (*Pinus Ponderosa*), and the "Bull" Pine (*Pinus Jeffri*), flourish. Cedar is also found there and other woods. The woods with the best timber are found at elevations from 3,000 to 7,000 feet. The general run of sugar and white pine is from 3 feet to 8 and 12 feet in diameter, while the height sometimes reaches 250 feet. The territory covered is estimated to be about 400 miles in length with an average breadth of about 20 miles. The woods are white, soft

and durable and are greatly in esteem in the East where practically the whole cut is sold, outside of the inferior grades which are disposed of locally. They are unsurpassed for doors, sashes, piano key boards, matches, finish, ceiling, etc., in a word, wherever strength, durability and ease in working, cleanliness and stability are required. There are many great plants in the interior, and one agency with \$1,000,000 capital, does the selling for a large number of mills. This helps to keep prices steady and always finds a market. The great railroad lines carry their product to every part of the United States. The work of lumbering is practically the same as in the redwood districts, steam machinery as a rule getting the logs to the mills, though in some instances ox teams are still used. Here, as in the redwood country, there are immense log ponds where the logs are stored away for the mills. The cut has run from 300,000,000 to 500,000,000 feet a year, this including mountain pine and red fir, but owing to the bad weather in the mountains lumbering in 1909 did not generally begin till June and the cut was short. The financial panic in the East also helped to lessen it in 1908. The present year, however, will restore normal conditions in this great section of the lumber industry. The production of 1900 and since 1905 may be given as follows:—

	Sugar Pine. Feet.	White Pine. Feet.
1900	53,558,000	200,000,000
1906	130,231,000	347,249,000
1907	115,005,000	381,700,000
1908	92,500,000	318,406,000
1909	95,000,000	225,000,000
1910	100,000,000	350,000,000



FIFTY-FIVE-INCH SAWS CUTTING A SUGAR PINE LOG.

RAILWAYS.

The year 1910 saw notable progress in railroad extension and betterment in California.

The opening of the Western Pacific, August 23, 1910, gave large promise of future improvement in railroad service generally.

The work on the Rocklin-Colfax cut-off on the Southern Pacific Ogden route, estimated to cost \$10,000,000 has been pushed vigorously, and is expected to be ready for operation by July. This cuts off some 30.8 miles; has a maximum grade of 1.5 per cent and a maximum curvature of but 6 per cent.

The electrification of the suburban lines of the same company is nearly completed and at a cost of about \$10,000,000.

The Dumbarton cut-off across the lower end of San Francisco Bay was opened for traffic September 24th. This with the bay shore "cut-off," ten miles in length, from San Francisco south, gives quicker and more convenient access to the city. The cost of the two works has been \$10,500,000.

The Mohave-Keeler line was completed and put in operation during the year.

Work is being continued on the Sacramento Southern, a new Southern Pacific line, via the Dumbarton cut-off, which will give a new direct all rail line between San Francisco and the Capital City.

The Santa Fe brought into operation during the year Parker cut-off of 83.33 miles in length from the Cadiz to the State line on the Colorado River. They also are putting a second main track between Daggett and Cottonwood. An extension was also made from Wahtoke to Piedra, 10.7 miles, in Fresno County.

The completion of the gap, 79 miles, between Shively and Willitts on the Northwestern Pacific, under the joint control of the Southern Pacific and Santa Fe, is near at hand and means all rail connection between San Francisco and Eureka on Humboldt Bay.

According to the figures furnished by the State Railroad Commission, the total mileage in the State is 7,545.094 miles main lines and 536.46 branches and spurs owned and controlled by sixty-one separate companies.

The mileage operated by the principal companies is as follows:

Southern Pacific System	3,651.20 miles.
Santa Fe System	1,287.89 miles.
Northwestern Pacific	374.99 miles.
San Pedro, Los Angeles & Salt Lake.....	73.00 miles.
Western Pacific	378.34 miles.
Yosemite Valley Railroad	79.08 miles.

The amount of money invested in California railroads is out of all proportion to the mileage, for one mile in the mountains costs more than twenty miles in the prairie States.

Electric Roads. There are thirty-five electric railway companies operating in the State, covering about 1,750 total mileage. They are distributed as follows:

ELECTRIC ROADS.

District.	Companies.
Bay Counties	10
Valleys South of Tehachapi	10
Coast Towns, San Diego to Eureka.....	5
San Joaquin Valley	5
Sacramento Valley	5
Total	35

The mileage of the principal electric roads is as follows:

Pacific Electric and Los Angeles Interurban.....	1220
United Railroad, San Francisco.....	271.81
Oakland Traction, Consolidated etc.	169.41
Northern Electric (Freight & Passenger road).....	140

Manufacturing. Statistics relating to manufacturing in the State are not easily obtainable to an extent that enables the Board to make full comparative tables of output or growth. Tables of the most important interests are given only. Manufacturing is a feature that should receive more attention in future than has been possible to give it in the past.

The census reports of 1910 are not yet available. The returns for 1900 and 1905 are here given from the U. S. Statistical Abstract for 1909:

	1900.	1905.
Number of Establishments.....	4,997	6,839
Capital	\$175,467,806	\$282,647,201
Wage Earners, Average Number.....	77,224	100,355
Total Wages	\$39,889,997	\$64,656,686
Cost of Materials Used.....	\$164,894,269	\$215,726,414
Value of Output.....	\$257,385,521	\$367,218,494

Fruit canning and fruit packing come under the head of manufacturing, and the output of the canning and packing houses aggregate many millions each year. In the department of dried fruit is included raisins, for which California has become famous.

The following figures, compiled for year ending September 30, 1910, and based on special investigation show the relative value of the products of the leading manufacturing industries in the San Francisco district, and are of interest in this connection:

**STATISTICS OF LEADING INDUSTRIES OF SAN FRANCISCO,
FOR THE YEAR ENDING SEPTEMBER 30TH, 1910.**

Industry.	Number of Estab- lishments.	Hands Employed.	Output.	Value.
Bags, other than Paper.....	6	200	40,000,000	\$ 1,000,000
Boots and Shoes.....	5	950		3,000,000
Bread and other Baking Products.....	113	1552		5,000,000
Canning & Preserving Fruits & Vegetables.	5	1450	1,350,000 cases	4,050,000
Clothing, Men's and Women's.....	57	2300		5,550,000
Coffee and Spice Roasting and Grinding...	8	378	25,000,000 lb. coffee 1,600,000 lb. spices	4,500,000
Confectionery	15	400		850,000
Cooperage	17	400		1,500,000
Electricity	3	639		3,366,000
Flour and Grist Mill Products.....	10	100		2,900,000
Foundry and Machine Shop Products....	91	3891	166,000 tons mach.	10,673,000
Gas	2	400	4,000,000,000 ft. gas	4,000,000
Ice Manufactured	4	60		150,000
Leather, Tanned, Cured and Finished.....	10	680	11,550,000 lbs.	3,000,000
Liquors, Malt	14	642	737,995 bbls.	5,166,000
Paints	15	250		2,000,000
Planing Mills	40	1300		4,000,000
Printing and Publishing, Book and Job..	200	2000		5,500,000
" Newspapers and Periodicals.	168	2496	73,000,000 yearly	5,569,500
Rope and Cordage.....	1	250		1,500,000
Sugar	2	1000	225,000 tons sugar } 14,000 tons syrup }	23,684,000
Slaughtering and Meat Packing, Wholesale	23	834		12,825,500
Slaughtering, Wholesale, not Including				
Meat Packing	5	500		7,174,500
Tobacco, Cigars and Cigarettes.....	28	1300	84,000,000 cigarettes 288,000 lb. tobacco	
Textiles	none			

Total Value \$121,206,500

Half of sugar in city, half in county.

Bread includes crackers, etc., \$1,500,000. (300 hands.)

The total value of the products of manufactures in the San Francisco district, according to the census of 1905, was \$159,033,080, an increase of 33.4 per cent over the figures reported in 1900. The figures of the seven surrounding counties, \$79,070,583, give an increase over 1900 of 41.3 per cent.

Los Angeles claims second place in value of manufactures, with an estimated output for 1910 of \$85,000,000; Oakland comes next with \$60,000,000 (1908); Sacramento, San Jose, Stockton and Fresno follow in the order named.

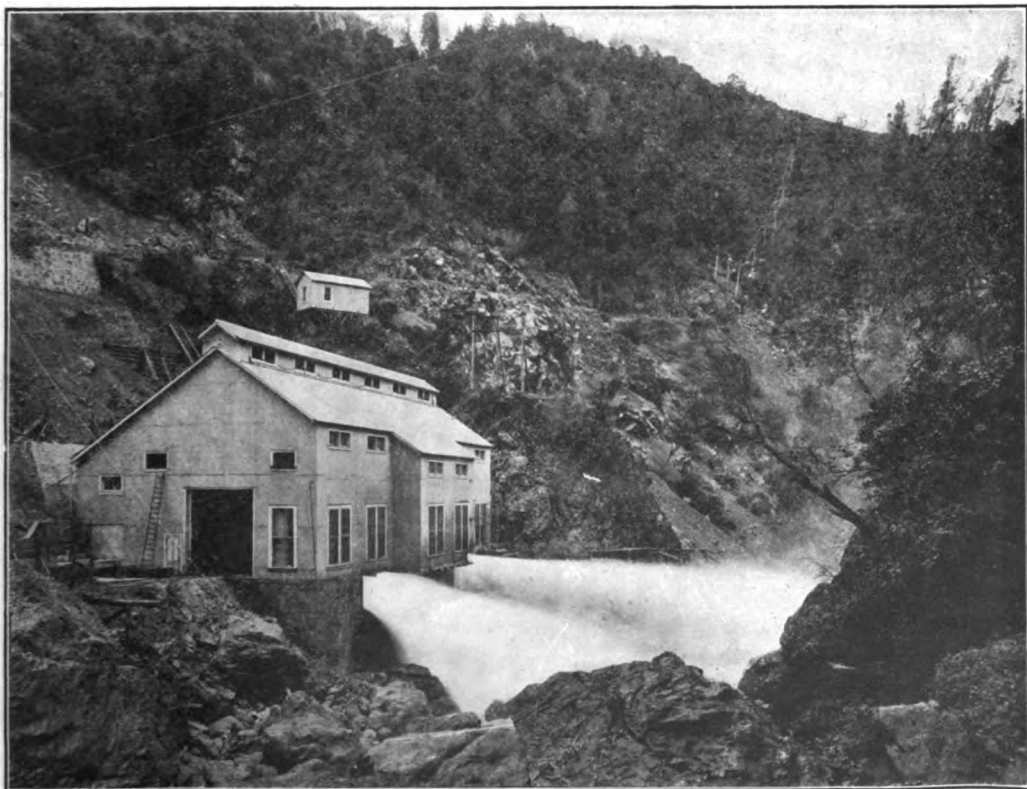
Water-Power and Electrical Development.

Closely connected with the future of manufacturing development is the fuel and water-power supply convertible into electrical power. The statistics of oil production are given on a preceding page. The following extract from Water Supply Paper No. 234 in the report of the U. S. Geological Survey is of much interest:

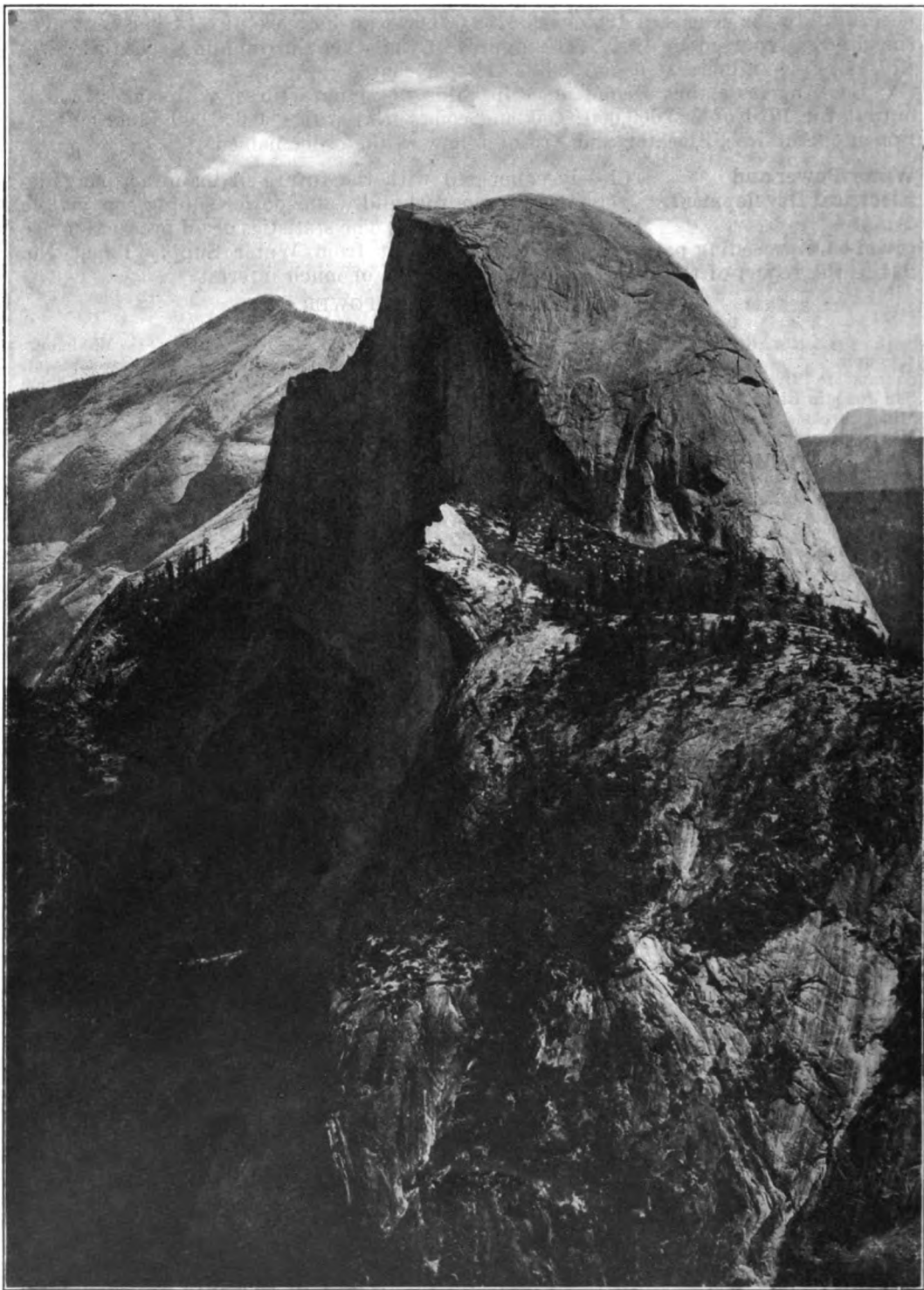
CALIFORNIA'S WATER-POWER.

DEVELOPED.			UNDEVELOPED.	
Source.	Wheels.	Horsepower.	Minimum.	Maximum development.
Sacramento River	576	280,735	2,420,000	4,580,000
San Joaquin River	159	86,224		
Minor streams, southern	74	50,183	759,000	3,140,000
Minor streams, northern	176	25,440	600,000	1,200,000
Sierra Nevada drainage	74	17,737	132,000	202,000
San Francisco Bay	11	6,455	36,400	88,300
Totals	1,070	446,744	3,947,000	9,210,300

With abundant oil for fuel for manufacturing power and motive-power on the one side, and with over 9,000,000 horsepower in water-power yet to develop, and a widening of markets both at home and in the Orient, California can face her industrial future with confidence.



ELECTRIC POWER PLANT IN THE SIERRA NEVADA MOUNTAINS.



THE HALF DOME, YOSEMITE VALLEY.

SUMMARY.

55

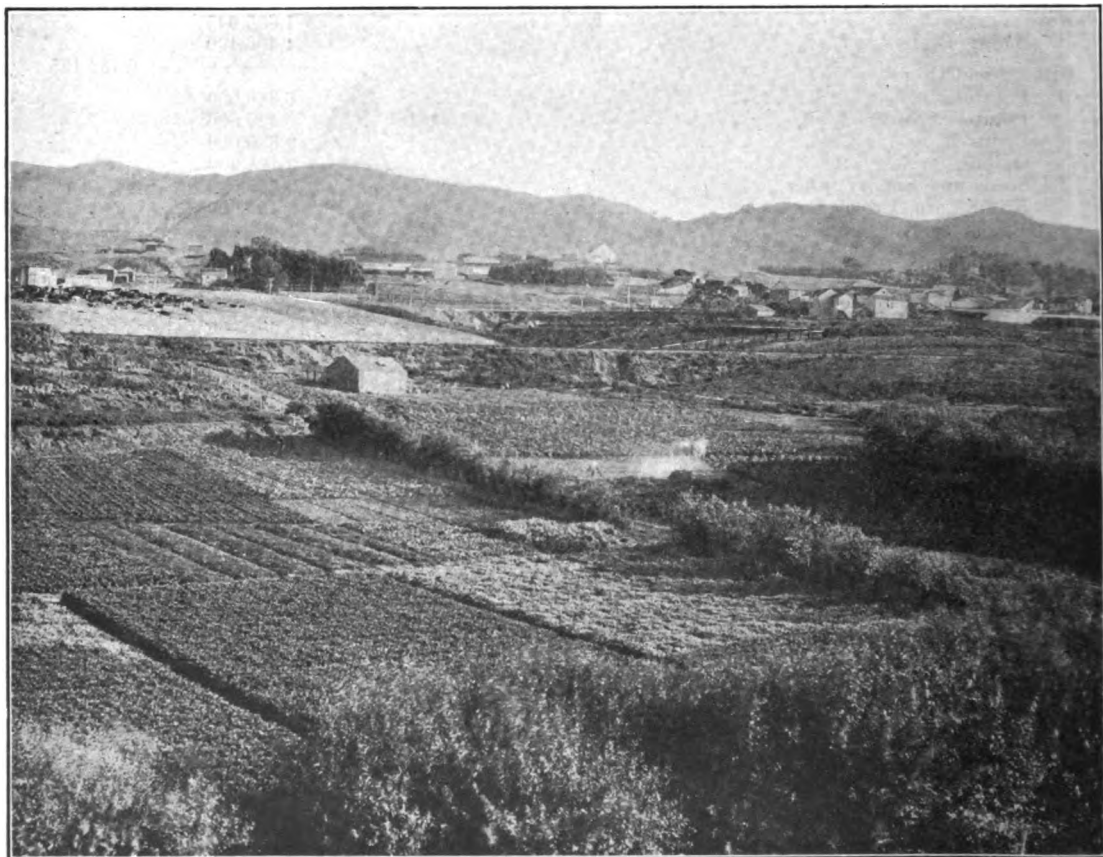
Summary of the farm values of products of the soil for 1910, marketed by the producer and for the most part shipped out of the State. Consumption by producers not included except in case of animals slaughtered for consumption by rural population.

Compiled from data gathered from transportation companies and other authoritative sources.

	Value.	Total Values.
Orchard Products—		
Fresh Deciduous Fruits	\$15,479,200	
Citrus Fruits	32,790,000	
Dried Fruits, including Prunes	17,793,000	
Canned Fruits	10,000,000	
Olives and Olive Oil	2,200,000	
Nuts	3,375,000	
		\$ 81,637,200
Vineyard Products—		
Table Grapes	4,452,200	
Raisins	4,640,000	
Wine and Brandy	25,500,000	
		34,592,200
Garden Products—		
Fresh	5,775,000	
Canned	4,500,000	
		10,275,000
Dairy Products		28,259,909
Poultry Products	16,790,000	
Honey, Wax, etc.	910,000	
		17,700,000
Farm Products—		
Barley	23,870,000	
Wheat	16,074,000	
Oats	4,182,000	
Corn	1,470,000	
Rye and other Grain	1,200,000	
		46,776,000
Grain and Grass Hay and Alfalfa		36,148,000
Hops	1,635,645	
Sugar Beet	4,496,490	
		6,132,135
Other Field Crops—		
Potatoes	6,840,000	
Potatoes, Sweet	420,000	
Beans	9,836,000	
Onions	3,428,000	
Seeds and Sundry other	2,265,000	
Kaffir Corn, Broom Corn, etc.	400,000	
Melons	1,650,000	
		24,839,000
Fish and Game		5,000,000
Forest Products—		
Lumber	18,050,000	
Shingles, Shakes, Laths, etc.	1,800,000	
Ties—Tan Bark	2,250,000	
Poles, Piles, Mine Timbers, Staves	2,000,000	
Cordwood, Wood Pulp, Extract, etc.	5,700,000	
		29,800,000
Petroleum (for 1910) 77,697,568 barrels		45,000,000
Minerals—		
Gold (1909)	20,237,870	
Copper (1909)	8,478,142	
Other Minerals (1909)	21,869,010	
		50,585,022
Farm Animals and Products—		
Increase	15,944,000	
Slaughtered for market in cities	19,000,000	
Slaughtered in rural districts and towns	10,000,000	
Wool and Mohair, etc.	2,200,000	
Hides, Tallow, etc.	3,000,000	
		50,144,000
Sundry others not included above—		
Nursery Products	2,000,000	
Florist Products	800,000	
Fruits marketed in cities	9,500,000	
Vegetables marketed in cities	14,500,000	
Cider, Vinegar, etc.	1,600,000	
		28,400,000
Grand total		\$495,288,466

A. L. McDONALD, Secretary. ROBERT NEWTON LYNCH,
Approved by the Board and ordered printed. Vice-President and Manager.

Note.—For data and statistics used in this report we are indebted to the Controller of U. S. Treasury; Prof. Alexander G. McAdie, California Section U. S. Weather Bureau; U. S. Department of Agriculture; State Agricultural Society; State Superintendent of Banks; State Mining Bureau; State Controller; San Francisco Clearing House; California Fish Commission; Superintendent of Public Instruction; State Dairy Bureau; State Railroad Commission; Auditing, Freight and Engineering Departments of Southern Pacific, Santa Fe and Western Pacific Railroads; United Railroads of San Francisco; Wine and Spirit Review; Petaluma Poultry Journal; California Fruit Grower; Pacific Rural Press; Pacific Lumber Trade Journal; Oakland Tribune; California Wine Association; Italian Swiss Colony; Frank D. Flint & Co.; Adolph Koshland; George Shima; Peter J. Shields; W. E. Sprott of the Tulare County Citrus Fruit Exchange; California Produce Co.; Campodonico Burns Corriea Co.; E. W. Maslin; E. H. Tryon; E. Clemens Horst; J. K. Armsby Co.; Griffin & Skelly Co.; Castle Bros.; many lumber dealers; the several beet-sugar refineries; Merchants' Exchange; Chamber of Commerce of San Francisco; Boards of Trade and Chambers of Commerce of various counties of the State; Board of Supervisors and Board of Public Works, San Francisco; Boards of Supervisors of various counties of the State; Sacramento Valley Development Association; and many growers, producers, and others throughout the State.



INTENSIVE FARMING IN CALIFORNIA.

IN MEMORIAM.

Arthur R. Briggs, died October 24, 1910.

The death of Arthur R. Briggs, member of this Board and of its Executive Committee, deprived California of an energy and influence that may not again be represented by one man.

His long, active membership in commercial bodies in the San Joaquin Valley, and his ownership and management of estates in that and the Sacramento Valley gave him many-sided knowledge of many things in the productive conditions of California.

As Director and Manager of the State Board of Trade, this knowledge proved to be an asset of the rural land owner and a guide to the land-seeker and settler, and Mr. Briggs became the foremost public servant and non-commissioned officer in the State. From him the State Board of Trade had its impulse to become the sole agent and helper of the rural land owner and land worker. Himself the producer of a variety of crops on his own lands, he felt in his own fortunes every turn in the fortunes of his fellow producers. Like them, he faced the un pitying elements when it was their mood to destroy, and, like, them, saw his vines and trees fruit and his fields change from seed time to harvest under the kindly sun.

He made the State Board of Trade the powerful agent of the producers of California. That was his great and final service to his State. Did unwise laws or their unwise administration threaten the producer, he put the power of organization against the wrong, and in no case failed to right it. If the orchardist stood powerless before the invasion of strange insect pest, helpless while his crops vanished, Mr. Briggs again used the power of organization effectively, and the orchards were no longer barren.

The story of his service to his fellow men is more than a chapter. It is a book.

The passing of such a man casts a wide shadow. To his old colleagues in this Board it is a personal sorrow. To his class, the rural producers of California, it is the loss of one who was a friend in every need.

We record this ascription to his memory, as a heartfelt expression of appreciation of one who in all relations was a whole man.

April 8, 1911.

COL. JOHN P. IRISH.

BY THE FRESNO COUNTY CHAMBER OF COMMERCE.

WHEREAS, In the fullness of years and the notable accomplishments of a busy career, Arthur R. Briggs has been removed by death from the activities of a useful life; therefore be it

Resolved, That in the death of Mr. Briggs the State has lost a distinguished industrial leader, Fresno County one of its most active pioneer developers, and this Chamber of Commerce one of its old and most loyal members.

The members of this body feel that the passing of Arthur R. Briggs while yet in the midst of useful activities is not only a loss to California and the county of Fresno, but a bereavement that is keenly felt by a very large number of warm, personal friends. To these the loss is irreparable and to them the sincere sympathy of this Chamber is extended.

WILLIAM ROBERTSON, *Secretary*.

BY THE SACRAMENTO VALLEY DEVELOPMENT ASSOCIATION.

Resolved, That the Sacramento Valley Development Association learns with deep regret of the death of the late Arthur R. Briggs, who, for many years, was closely identified with development work in California, and takes this means of expressing its appreciation of his able and conscientious activities in the upbuilding of this State; and be it further

Resolved, That a copy of this resolution be spread upon the minutes of this Association and that a copy be sent to the California Development Board and the relatives of the deceased.

Adopted at the regular monthly meeting of the Executive Committee of the Sacramento Valley Development Association held in Sacramento, California, November 19, 1910.

(Signed) M. Diggs, *President*.

(Signed) O. H. MILLER, *Secretary*.

CALIFORNIA DEVELOPMENT BOARD

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WM. J. DUTTON	First Vice-President
ROBERT NEWTON LYNCH	Second Vice-President and Manager
WELLS FARGO NEVADA NATIONAL BANK	Depository

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MILES STANDISH	Crocker Bldg., S. F.

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APPENDIX

The appended articles are furnished by recognized authorities on the subjects treated, and answer many inquiries made by homeseekers.

CLIMATE OF CALIFORNIA.

By N. P. Chipman.

California must be counted among the most valuable possessions of the United States for many reasons; chiefly, however, because of the matchless climate of the State and the high economic value it bestows upon a large area of arable land whose coast line measures 850 miles from point to point (about 1,000 miles of actual coast), the average width of the State being about 200 miles. The south boundary line of latitude emerges on the Atlantic Coast near Savannah, Georgia, and the north parallel near Boston, Massachusetts. Between these two latter points lie ten States of the Union. It counts for something to the nation that this extended coast line, on the Pacific Ocean, is fortified by a region capable of supporting many millions of people and that the coast to the Canadian boundary is backed by a country of almost boundless resources.

It is not generally appreciated that all of France, all of Italy north of Rome, and half of Spain lie **north of the north boundary of California**. This relative position on the west coast of our continent would suggest a mild climate, but not necessarily its unique and exceptional character. It is the purpose of the writer to bring to public attention the principal features of this climate and to show its economic value.

Professor Alexander G. McAdie, District Forecaster of the United States Weather Bureau, San Francisco, states that the climate of California is controlled by four great factors: (1) The movements of the great continental and oceanic pressure areas (commonly called "high" and "low"), together with the movements of individual pressure areas: (2) the prevailing drift of the atmosphere in temperate latitudes from west to east; (3) the proximity of the Pacific Ocean, with a mean annual temperature near the coast line of 55 degrees, Fahrenheit, a great natural conservator of heat, to which is chiefly due the moderate range of temperature along the coast from San Diego even to Tatoosh Island (extreme northwest coast of Washington); and (4), the exceedingly diversified topography for a dis-

tance of 200 miles from the coast inland. To this diversified topography is due the fact that California is a land of many climates, "from the hottest subtropical to the cold temperate, and from the driest desert to the most humid regions of the higher mountains and northern coast."

The Sierra Nevada Mountains form a natural boundary line on the east, rising gradually from the west to a height of from 8,500 to 14,000 feet, much above the snow-line, and falling off to the Nevada plateau, which is about 4,000 feet above sea-level. The Coast Range Mountains form a broad belt, traversing the entire coast, and consist of two or three parallel ranges from 3,200 to 5,000 feet high, and between these ranges are many rich valleys, some of large extent. The Coast Range merges into the Siskiyou Mountains on the north, a connecting link with the Sierra Nevada, crowned by Mount Shasta; and the Tehachapi Mountains, far to the south, form another connecting link.

Between the Sierra Nevada and the Coast Range Mountains and these connecting mountain links lies the great central valley of California, about 400 miles long and from 50 to 60 miles wide; an agricultural district of great fruitfulness, comprising quite one-ninth of the State. There is but little waste land in it. The northern portion is blessed by ample rainfall, and the southern part, when watered, is everywhere very productive, as is the entire valley. The Sacramento River runs south through the northern portion (Sacramento Valley), rising near Mount Shasta; the San Joaquin River runs north through the southern portion (San Joaquin Valley); the two rivers uniting near the middle of the great valley and flowing westward into San Francisco Bay, and thence through the "Golden Gate" into the Pacific Ocean.

There is here a wide break in the Coast Range through which the summer trade winds find their way into the interior, an important factor in the climatic conditions of the valley. The sea-breeze blows up stream, north into the Sacramento Valley and south into the San Joaquin Valley, thus tempering the heat of the great valley. This influence, together with the dryness of the atmosphere, renders the occasional high temperatures of these two valleys more easily endurable at 110 degrees than is 95 degrees in the humid regions of the Eastern States.

South of the Tehachapi Mountains the Sierra Nevada Mountains continue at less elevation, and are locally called Sierra Madre. The wonderfully developed region known as Southern California lies west. On the east is the Mohave desert, and south and east the Colorado desert; important regions of the State as yet but partially developed, but of great fertility by the application of water, which the genius and enterprise of the people are rapidly bringing in touch with the land. As in the north, the breaks in the Coast Range and in the Sierra Madre become important factors in modifying the climate of the interior. In Southern California and in Central California (San Joaquin Valley) extensive irrigation systems already in operation supply the comparative lack of rainfall. Irrigation is also being extensively developed in the Sacramento Valley.

Winds. The prevailing winds come from the ocean and are principally from the southwest landward, producing a cool summer climate along the immediate coast. Fogs sometimes sweep in from the ocean, more or less unfavorably affecting the enjoyment of the climate, but by their moisture contributing to the growth of vegetation. These fogs are less harsh on the south coast. The heat rising from the great valley draws a strong current from the trade winds through the Golden Gate that divides as it passes and extends south to the Tehachapi Mountains and north to Mount Shasta, rendering the air of the valley more delightful. The same drift of the trade winds tempers the air far into the interior in Southern California. The high mountain barrier on the east, through the length of the State, deflects the cold winds that sweep down over the Nevada plains in winter from Alaska and prevents their entrance into the valley regions of California. Dry north winds sometimes blow through the great valley in summer, raising the temperature, and are occasionally injurious to growing crops, but they seldom continue more than three or four days, when they are succeeded by the

CLIMATE.

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CLIMATOLOGICAL DATA FOR 1910.

Stations.	Counties.	Eleva- tion, feet.	Temperature Degrees Fahrenheit.		Precipitation, inches.		Rainy Days.	Sky.			Part of Country.
			Annual Mean.	High- est.	Low- est.	Total for year, inches.	Total Snowfall, inches.	Clear Days.	Partly Cloudy Days.	Cloudy Days.	
Independence	Inyo	3,907	58.7	102	10	2.37	2.3	241	98	26	Mountain and High Plateau.
Hornbrook	Shakyou	2,154	47.2	101	17	6.90	9.5	234	49	32	"
Alturas	Modoc	4,460	47.6	100	17	14.16	35.0	292	99	66	"
Dunsmuir	Shakyou	2,285	55.1	104	-30	41.38	58.0	244	1	120	"
Quincy	Plumas	3,400	50.3	97	-15	21.85	75.0	238	30	67	"
Summit	Placer	7,017	45.6	90	-2	37.90	257.0	254	12	99	"
Tamarack	Alpine	8,000	40.9	83	-20	37.30	392.0	224	55	88	"
Yosemite	Mariposa	3,945	51.6	99	0	21.51	72.0	227	36	42	"
Redding	Shasta	3,582	63.2	108	26	24.00	1.2	257	49	91	Sacramento and San Joaquin Valleys.
Red Bluff	Tehama	307	62.9	111	26	14.59	0.4	226	54	85	"
Oroville	Glenn	254	63.0	113	26	11.51	0	254	62	49	"
Colusa	Colusa	60	59.6	105	26	7.78	...	230	63	72	"
Sacramento (I)	Sacramento	71	58.8	103	28	8.39	0	288	56	42	"
Stockton	San Joaquin	24	62.3	102	26	8.34	0	275	0	90	"
Merced	Merced	178	64.4	110	26	4.88	0.6	205	96	64	"
Fresno	Fresno	293	64.4	110	26	5.31	T	233	43	42	"
Bakersfield	Kern	404	67.4	110	30	11.30	T	274	1	90	"
Fruto	Glenn	624	62.0	111	26	12.22	38.0	216	47	102	"
Oroville (near)	Butte	250	62.4	108	25	32.17	T	248	31	86	"
Nevada City	Nevada	2,580	55.4	101	8	15.30	T	260	18	97	"
Rocklin	Placer	249	61.1	107	24	28.16	9.0	237	48	51	"
Placerville (B. R.)	El Dorado	1,375	59.7	101	17	20.76	17.0	246	44	34	"
Jamestown	Tuolumne	1,471	66.7	109	14	8.78	T	217	25	70	"
Lemoore	Tulare	600	66.7	118	24	5.94	T	306	7	68	"
Readley	Kern	347	63.9	112	26	5.18	T	17	25	7	"
Callente (B. R.)	Kern	1,390	60.9	108	34	5.18	0	116	117	52	Sea Coast.
Eureka	Humboldt	64	50.9	74	28	29.65	0	159	117	189	"
Point Reyes	Marin	490	51.4	83	35	12.12	0	154	93	168	"
San Francisco	San Francisco	207	55.2	90	35	12.38	0	156	114	95	"
Monterey	Monterey	15	57.4	90	35	12.35	0	233	41	31	"
San Diego	San Diego	130	59.3	97	31	10.95	0	238	69	28	"
San Jose	San Jose	93	59.3	96	31	5.75	0	231	95	29	Southern California.
Los Angeles	Los Angeles	293	63.1	100	35	4.89	0	231	139	52	"
Riverdale	Riverdale	351	64.2	110	27	4.68	0	237	31	37	"
Escondido	San Diego	557	62.5	103	26	9.72	0	274	277	14	"
Eishore	Riverdale	1,354	63.2	111	20	6.37	0	279	41	45	"
Redlands	San Bernardino	1,362	64.0	108	25	6.31	0	220	29	86	"
Santa Rosa	Sonoma	181	56.0	100	20	17.97	0	217	98	56	West of Coast Range.
Mount Tamalpais	Marin	2,375	55.6	98	21	15.46	2.1	195	89	81	"
Lick Observatory	Santa Clara	4,209	53.5	88	15	18.85	22.5	193	78	94	"
San Jose	Santa Clara	95	57.0	102	18	7.66	0	237	72	56	"
Hollister	San Benito	284	56.6	102	25	1.5	0	229	77	68	"
Los Gatos	Santa Clara	600	58.1	103	23	16.58	1.5	229	77	59	"
Paso Robles	San Luis Obispo	1,800	58.5	110	16	10.82	T	257	52	56	"
Ojai Valley	Ventura	900	61.5	108	24	10.82	T	281	30	54	"
Palm Springs	Imperial	584	72.7	118	28	8.94	0	267	77	21	"
Calxico	Imperial	0	73.4	116	24	0.64	0	262	69	34	Southeastern California.
Mecca	Riverside	-185	72.4	116	30	1.15	0	276	53	36	"

T.—Indicates trace of precipitation.
B. R.—Broken Record.

balmy and cool ocean breezes. Along the immediate coast the average winter and summer temperature differs only about four degrees, and one of the characteristic features of the San Francisco climate is exemplified by the sight of furs worn by ladies over summer garments, and fires in summer are not infrequent.

All over the Coast, however, there are thousands of sheltered nooks and small valleys and sequestered spots, where the fogs and harsh winds of the Coast have no appreciable effect and where the climate is charming and sunny to the last degree, both winter and summer.

Rainfall. The terms "winter" and "summer," as commonly used in the Eastern States, have no application in California. The year is more properly divided into "rainy season" (winter) and "dry season" (summer). Practically all the rain falls from about the first of November until April; the remaining months of the year are rainless, except in some parts of the mountains and on the Coast north of Cape Mendocino, where occasional summer showers occur. Cereal crops mature in early summer after rain ceases, and no housing of crops is necessary for protection against rain in harvest time.

The rainfall of California is a characteristic feature of the climate. A word as to its source and cause will be interesting. Professor McAdie points out that over the North Pacific Ocean in winter there exists an area of low barometer (latitudes 40 and 60 degrees north and 130 degrees west to 140 degrees east longitude), while an area of high pressure overlies the greater part of North America with a southwest extension to the tropics and west to the one hundred and sixtieth meridian. He says: "We shall find that typical wet winters on the California coast occur when this great North Pacific 'low' extends well eastward, overlying the continent west of a line drawn from San Francisco to Calgary (Canada). At the same time the great continental high area apparently recedes to the southeast. On the other hand, the pressure distribution characteristic of a 'dry' winter on the California coast is marked by the prevalence of the continental 'high' over the entire country west of the Rocky Mountains."

Our winter rain storms (barring an occasional one coming in from the ocean unheralded) have their origin off the coast of Vancouver, and curiously enough are attended in the Sacramento Valley by south winds. The storms diminish in intensity as they travel south, tapering off as they approach Southern California. The table will show this graphically, from which will be seen also the great variations of rainfall within the State, and even within the great valley. In 1910, for example, the rainfall at Eureka, Humboldt County, on the immediate coast, was 29.65 inches, and at San Diego but 5.75 inches. At Redding, Shasta County (interior), the rainfall was 24 inches; at Red Bluff, forty miles south, 14.59 inches; at Sacramento, 7.78 inches; Fresno (center of San Joaquin Valley), 4.88 inches; Bakersfield (extreme southern point of valley), 5.31 inches. In the Sierra Nevada Mountains the rainfall increases about one inch for every hundred feet elevation. It will be observed that the rainfall south of Tehachapi Mountains (Southern California) is greater than at the extreme southern portion of the San Joaquin Valley.

The direction of the Coast valleys exerts striking influence upon rainfall and temperature, dependent upon the facility for the trade winds to reach them. The climatic and agricultural character of the foothills, up to 2,000 or 2,500 feet, is much the same as in the valley, although the character of the soil is different. Even higher, fine deciduous fruits are grown. Still higher are the lumbering and mining camps, and thousands of cattle and sheep are herded in summer, where in winter the mountains are deeply covered with snow. Illustrative of the characteristic variations of climate, it may be stated that in the vicinity of Summit, Placer County, elevation 7,017 feet, the temperature was 2 degrees above zero, and the snowfall for the year was 257 inches. At Rocklin, Placer County, 30 miles west, elevation 249 feet, the lowest temperature was 24 degrees above zero. All the natural ice consumed in California was made near Summit, while oranges were being gathered for market around Rocklin.

Temperature I have prepared the foregoing table from the "Annual Summary, California Section, of the Weather Bureau," for 1910. It shows not only temperature, but also rainfall, elevation of points above the sea, clear and cloudy days. I have taken illustrative points in Northern and Central California, the Coast country and the mountains. It will be noted that while the annual mean temperature of the Pacific Coast does not differ greatly from the annual mean of the Atlantic Coast, the average summer and average winter here and on the Atlantic are wide apart, and the extremes between the highest and lowest temperature are here not very great. It is this exemption from extremes of temperature that constitutes the charm, and healthfulness as well, of the Pacific Coast.

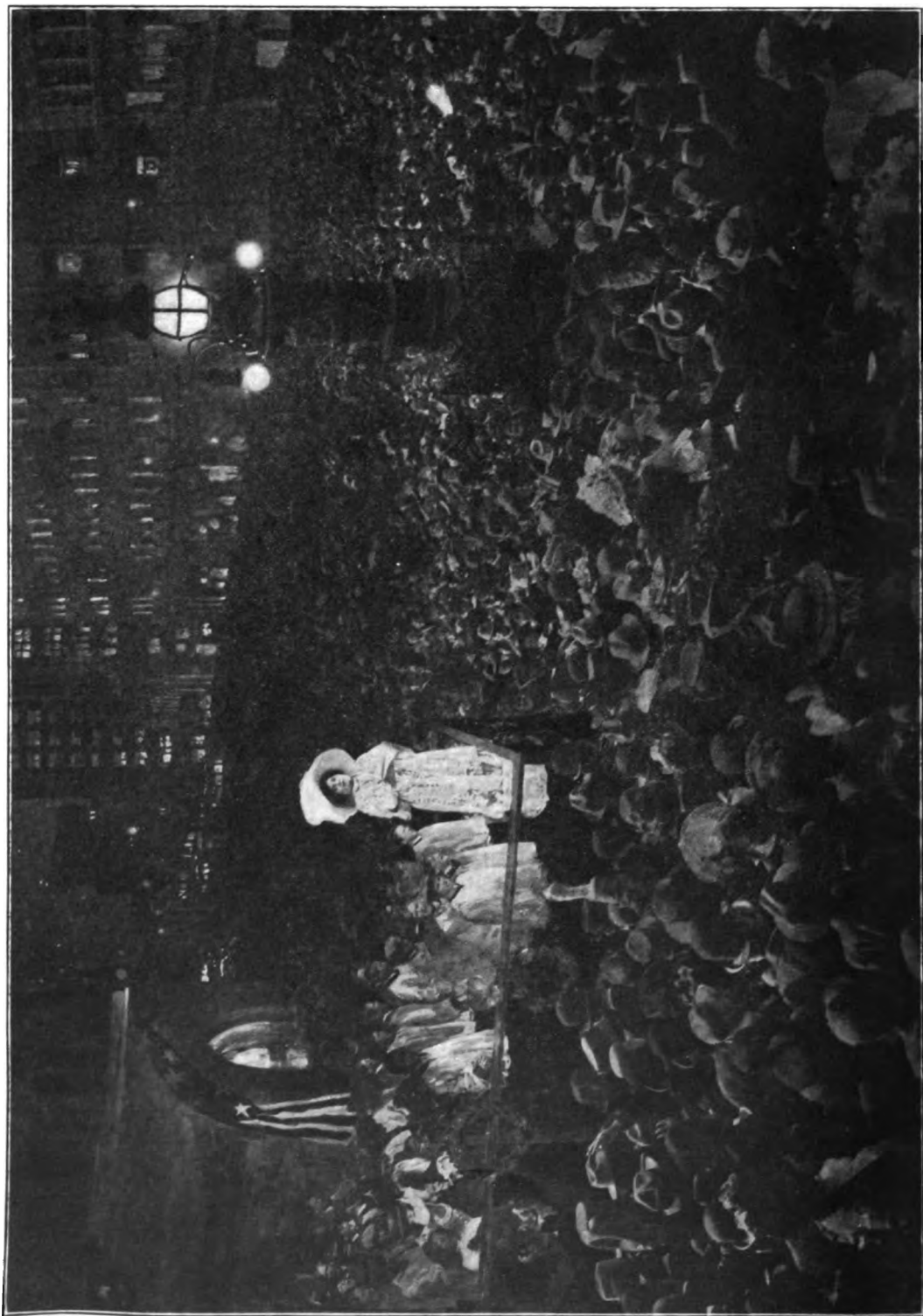
In the interior, especially in the great valley, the seasons show greater extremes of temperature, but, as already suggested, the dryness of the air renders these extremes less felt than on the Coast, where the air is more moist. The limit of winter cold is the test of what may be grown rather than the average temperature.

And so we find citrus fruit flourishing from the north to the south end of the great valley, and orange growing is a leading industry in several counties of that valley. In Southern California both the heat and the cold are comparatively milder, although the readings of the thermometer do not much differ from the points north of the Tehachapi. It is shown by the table that there were 211 clear days in San Jose as against 194 in Los Angeles during the year, although there were twice as many rainy days in San Jose. Abundant sunshine is also found in the interior. For example, Sacramento, in the north, had 230 clear days, and Riverside, in the South, 237. In truth, the California of "sunshine, fruit and flowers" is pretty nearly the whole State, below high mountain elevations.

Climate As far back as we have any recorded history, and behind this, embracing traditions coming through the early Mission fathers, we learn of the same equability of temperature, the same balmy atmosphere, the same luxuriance of vegetation. Our soil may require renewing by fertilization, but our climate is as constant as the sun. The conditions which have produced the result are themselves unchanging, and so must be the result.

It Is California is a universal sanitarium. The climate of the Coast is **Health-Giving.** invigorating, stimulating and delightful, neither hot nor cold; the laborer knows no fatigue except from physical exhaustion resulting from over-taxed muscles. The brain-worker yields only to failure of mental powers. In the interior valleys, in midsummer, the temperature is higher, and there is discomfort at times while working in the harvest fields and at the desk and behind the counter. But the dryness of the air robs the thermometer of much of its terror. The sensible temperature, i. e., the temperature we in fact experience or feel in the valleys, is less irksome at 100 or 110 degrees than in regions of greater humidity of the atmosphere where the reading is from 85 to 95 degrees. Sunstroke here is unknown. It is the common experience of persons coming into almost any part of the State that they increase in weight and strength, are less troubled with nervous affections, sleep and eat well, and improve in health if ailing from any cause.

Source of The variety of temperature and climatic conditions existing in the **Happiness.** mountains, valleys, and on the coast, and the celerity and ease with which our inhabitants may change their immediate surroundings, constitute one of the great charms of California life. Thousands of families residing in the valleys find their way into the mountains or to the seacoast and have most delightful camping-out experiences; and this they do in a few hours or a day or two at most, with their own conveyances. Our valleys and mountains lie so related to each other that no spot can be found devoid of scenic beauty. There is no dull monotony in the farmer's life as there is from necessity in the lives of those who reside on the great plains regions of the West, few of whom are ever permitted to enjoy the inspiring and elevating means of recreation and rest from labor which are a part of our life here.



MADAME TETRAZZINI SINGING IN THE OPEN AIR AT LOTTA'S FOUNTAIN, SAN FRANCISCO, CHRISTMAS EVE, 1910.

Some Peculiarities. Degrees of latitude cut little figure in determining the readings of the thermometer, which is not at all true on the Atlantic Coast and in the West. The foregoing table tells the story from official sources for 1910 and is valuable as covering the whole distance and intermediate points, from San Diego, near the south line of the State, to Hornbrook, Siskiyou County, near the Oregon line, nearly ten degrees of latitude apart.

The fact that latitude has little to do with our climate is a remarkable feature. It is not true of Italy, for there is a great variation there between the temperature north and south. It is not true of France or elsewhere along the west coast of Europe. We believe this to be a peculiarity unique and found only on this Coast. This peculiarity is further attested by the fact that in nearly the whole length of this vast region the same fruits are grown. Within a radius of fifty miles around Oroville, which is 150 miles north of San Francisco, and 650 miles north of Los Angeles, there were nearly five hundred (500) carloads of oranges raised last year and shipped out of the State, and they ripen earlier than in the south. Elevation has much more to do with temperature than latitude, for in high altitudes we find snow. Our mountain summer climate is extremely delightful and is destined to draw many Eastern people to the numerous charming retreats in the Sierra Nevada and the Coast Range.

Economic Value. But, after all is said, it must be conceded that climate is our greatest resource because of its high economic value, as it is also our most valuable asset. The unthinking speak of climate as an attraction rather than a resource, but it is a resource because by its influence we are enabled to so marvelously diversify and increase the number of our agricultural products, and often, too, all these products may be grown on the same body of land. It is a resource, because man's labor here can be profitably employed every day in the year; because there is no month when vegetation in some form is not growing, and because it furnishes ideal conditions for the growth of irrigated crops. There is no time in California when all nature is at rest or plant life is sleeping. In the field, orchard, garden, factory, and in the mines; on the stock-farm and in the dairy, every day is a day of productive labor. We commence shipping fresh deciduous fruits in May and there is no cessation until December. In November we begin to ship citrus fruits, and they overlap the deciduous fruits and continue, in fact, the year through.

Professor E. W. Hilgard justly sums up the matter thus: "Taken as a whole, California corresponds in its climatic features and adaptation to the Mediterranean region of Europe and Africa—a grand Riviera, with a partial background of the desert as well, where the date palm and the ostrich find a congenial home, and alluvial plains equaling in richness the famed delta of the Nile."

IRRIGATED AGRICULTURE—THE DOMINANT INDUSTRY OF CALIFORNIA.

By Samuel Fortier.

California has always been considered a State of great possibilities. Her mines and her commerce and her climate and agriculture have long been the theme of inspiring pen-pictures. With a range of climate and soil and of mountain and valley more varied than that possessed by any of her sister States, with a geographical position and commercial facilities naturally favorable to intensive development, she has ranked as the leader in the upbuilding of Western America. But while her gold and her seaports and her forests and commerce have made her position unique among the States, her future has always been considered bound up in her agriculture. Over half a century of development has shown that if this agriculture is to be the best of which the State is capable, it must be founded on irrigation, and for years the careful husbandman has, over a large portion of the State at least, made the artificial application of water to land an important part of his industry. Hence it is that any treatment of irrigation in California must consider not only what has been accomplished, but what seems possible of accomplishment in the future.

The total land area of California is approximately one hundred million acres. According to data secured by the Office of Irrigation Investigations of the United States Department of Agriculture, about 2,500,000 acres was actually irrigated in 1909. This statement, however, does not convey a true idea of the relative importance of irrigation to agriculture in California. Professors Hilgard and Loughridge, of the University of California, estimate that only fourteen million acres, or about one-seventh of the total area, is valley agricultural land, so that the two and one-half million acres irrigated comprise more than one-sixth of the irrigable land of the State. This estimate does not include the tillable upper mesas and mountain valleys, both of which contain large areas of irrigable land. Yet this is not the whole truth. In 1902 about one-fifth of all the irrigated land in the United States was in California, and this State ranked first in the total number of irrigated farms and in the total construction cost of systems. The highest priced irrigated land in America is found in California, and in no other State has water for irrigation reached so high a value, or been as carefully and as economically used. And in no other State is there so great an area of fertile farming land for which the available supply is so large.

Irrigation, like any other development, has followed the lines of most evident financial returns. Hence the localities of least annual and summer rainfall were the first to be reclaimed by the artificial use of water. The tide of irrigation, however, has been moving steadily northward, and excepting in the mountainous sections and the sections of excessive rainfall, the necessity for irrigation, or at least the value of it where it is not a complete necessity, is almost universally recognized. While heretofore, then, irrigation has followed the line of the most evident return, in the future it will follow the available water supply.

The water supply of the State is in its streams and wells. The wells now dug and in use are chiefly in Southern California and in the lower San Joaquin and the Santa Clara Valleys. Only the larger streams of the State have been measured, and without reliable data it is impossible to estimate the flow in the hundreds of smaller streams.

The supply in the larger streams, as measured by the United States Geological Survey, is given in the following table. These figures give in round numbers the average annual flow in acre-feet for the past four to six years:

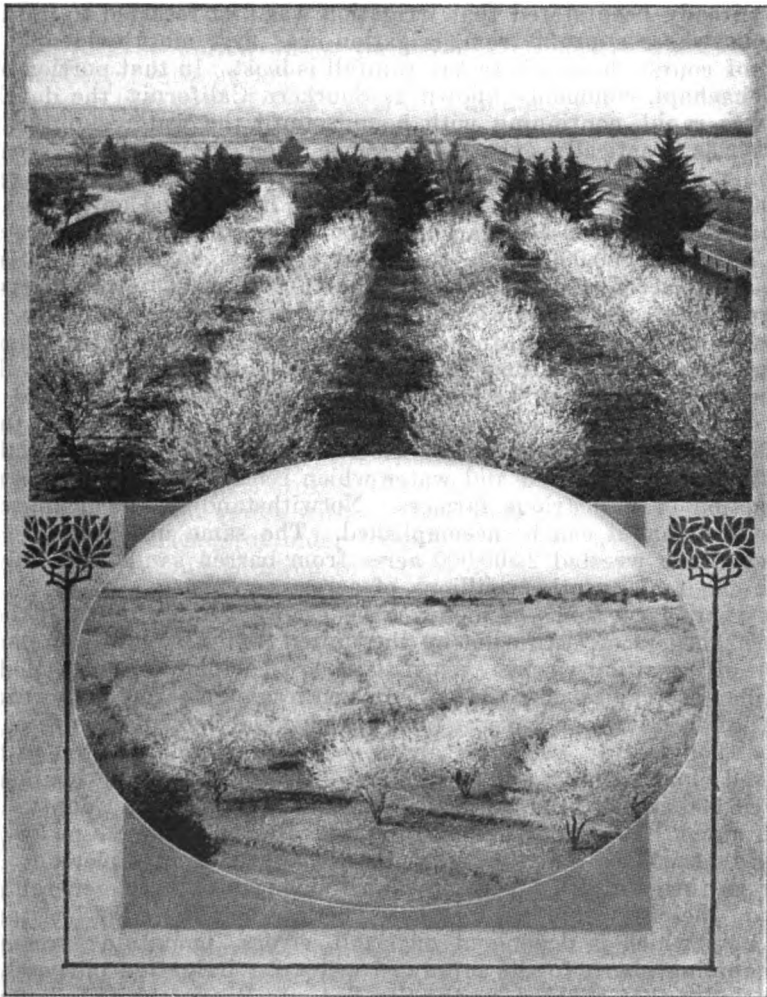
TOTAL MEAN ANNUAL FLOW OF CALIFORNIA STREAMS IN ACRE-FEET.

Name of Stream.	Station.	Acre-feet.
San Joaquin River	Herndon	1,840,000
Tuolumne River	La Grange	2,130,000
Kings River	Sanger	2,138,000
Stanislaus River	Knight's Ferry	1,365,000
Merced River	Merced Falls	1,220,000
Kern River	Bakersfield	658,000
Kaweah River	Three Rivers	534,000
Tule River	Porterville	180,000
Salinas River	Salinas	200,000
American River	Fair Oaks (near)	3,610,000
Yuba River	Smartsville (near)	3,256,000
Feather River	Oroville	6,095,000
Cache Creek	Yolo	420,000
Stoney Creek	Fruto (near)	570,000
Sacramento River	Red Bluff (near)	10,175,000
Southern California streams		200,000
Colorado River at Yuma (one-half flow)		15,550,000
Total		41,866,000

Leaving out of consideration the water supply available in the creeks and smaller rivers, 42,000,000 acre-feet of water is sufficient to cover the 14,000,000 acres of agricultural land in California to a depth of over 36 inches, which is ample for the growth of all crops. This vast quantity of water can never be entirely utilized in irrigation, because it cannot be fully controlled, but the statement of it shows the tremendous potentialities of California irrigated agriculture.



FISHERMEN'S WHARF, SAN FRANCISCO, AT MID-DAY.



ALMOND TREES IN BLOOM.

What California is now accomplishing by irrigation can partly be told by using as a basis the irrigation census of 1902. According to this census, 1,708,720 acres were irrigated in 1902, which was an increase of 18.2 per cent over the area irrigated in 1899. From 1902 to 1909 the increase has been more rapid, and about 2,500,000 acres are being watered at this time.

Using the figures that were true up to 1902 as a basis, the total cost of the irrigation systems has been over \$27,000,000, or over \$13.50 per acre. The significance of this last figure is apparent when it is remembered that it is nearly one-half the total value of land and buildings invested in manufactures in California in 1900.

From the returns made by assessors and the shipments of products out of the State it is possible to form an approximate estimate of the value of a part of the irrigated product. Of the 300,000 acres in vines and an equal area in orchards, the annual gross returns to the growers would not vary far from \$150 per acre, or \$90,000,000 in all. Then, in addition, there is alfalfa, vegetables, small fruits and other crops, the greater part of which are irrigated. The gross returns from these would increase the annual value to the extent of \$45,000,000.

It has already been stated that irrigation was first resorted to in California in those sections where a profit from irrigation was first most evident. These sections have, of course, been where the rainfall is least. In that portion of the State south of Tehachapi, commonly known as Southern California, the development of irrigation was rapid, continuing with bounds until the water supply available in the streams was practically exhausted. Since then the irrigated area has been extended only by resort to pumping from wells and by endeavoring to make the water already diverted irrigate two acres where it irrigated only one acre before. The total areas under ditches in various parts of the State in 1909 were as follows: Southern California, 850,000 acres; the Coast country, 85,000 acres; San Joaquin Valley, 2,150,000 acres; Sacramento Valley, 630,000 acres; other parts of State, 161,000 acres; total, 3,876,000; of which about two-thirds was actually irrigated in 1909. Outside of Southern California, the principal areas irrigated from wells and springs were located in the lower San Joaquin and in Santa Clara Valley.

The foregoing is a brief statement of what has been accomplished by private enterprise during less than half a century in reclaiming a portion of the irrigable lands in California. The attention of the reader has likewise been called to the natural resources in both land and water which remain undeveloped, awaiting the concerted action of industrious farmers. Notwithstanding the magnitude of this task, we believe that it can be accomplished. The same intelligence, energy and perseverance which wrested 2,500,000 acres from barren sands and low-producing grain fields can reclaim other millions of acres.

Of late years large sums of money have been expended on both the northern and southern borders of California by the United States Reclamation Service in the construction of irrigation works. When these are completed and settled they will materially increase the revenues obtained from irrigated farms and orchards. Over 55,000 acres of the Klamath Project lies in Modoc and Siskiyou counties, California. This land, although over 4,000 feet above sea-level, is well adapted to the growth of alfalfa, red clover, grains and vegetables. On the southern boundary of the State, over 16,000 acres of the Yuma Project are in Imperial County, California. These, with about 14,000 acres included in the Orland Project, make a total of 85,000 acres that will be irrigated when these projects are completed.

The areas thus far developed may be divided into three general groups depending upon their geographical location. The first comprises the territory south of Tehachapi Pass which is dependent on small rivers, mountain streams, flowing wells and pumping plants for its supply of water for irrigation purposes. The second area includes that covered by the San Joaquin River and its tributaries known as the San Joaquin Valley. The third area is the drainage basin of the Sacramento River and its tributaries covering central and interior Northern California. A full description of irrigation in the Sacramento Valley is given in Bulletin 207 of the Office of Experiment Stations, U. S. Department of Agriculture, and sim-

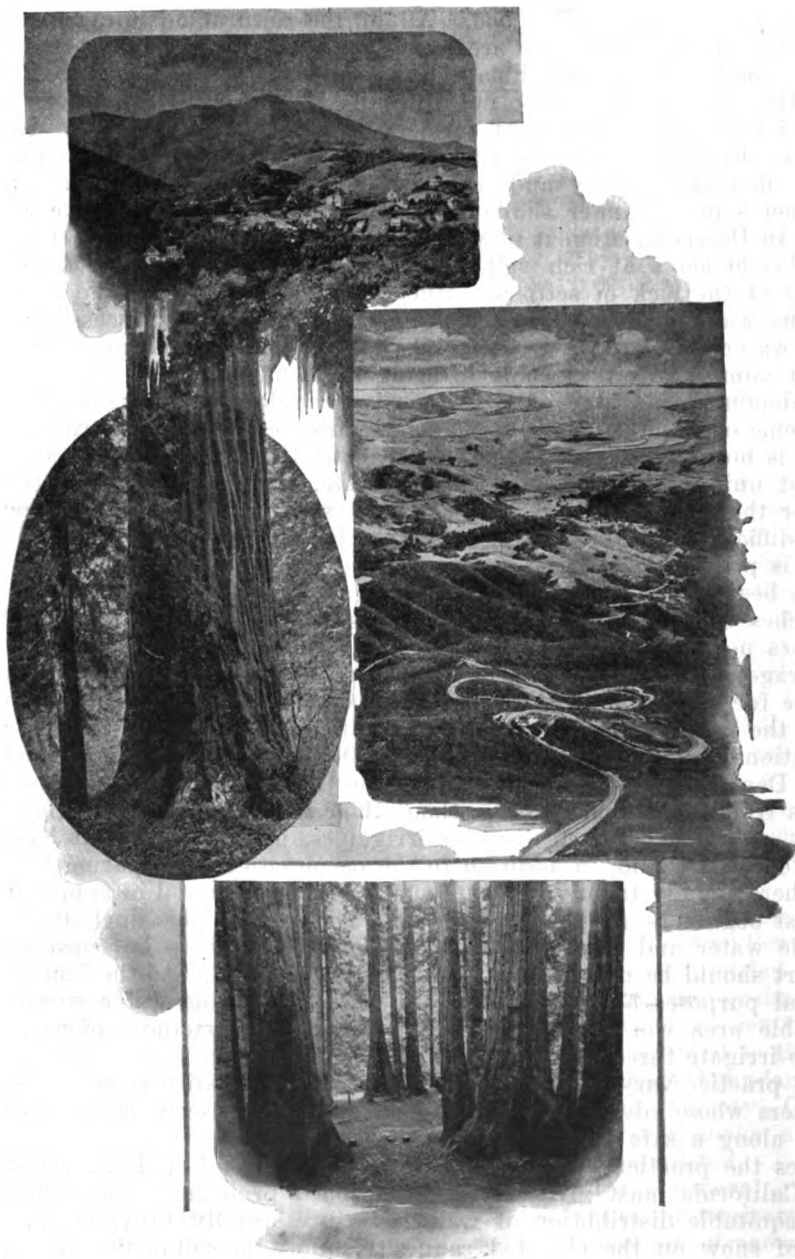
ilar reports on the San Joaquin Valley and Southern California are now being prepared by the same office.

What is most needed in this State and what we should most highly prize is an influx of industrious settlers, each possessing sufficient means to enable him to make a fair start along the line of irrigated agriculture. The opportunities open to this class are exceptionally good. All of the natural advantages essential to the success of the irrigated farm are to be found in the great central valley of California—fertile soil, good climate and an abundant water supply. Yet these natural gifts count for little when not utilized. We need the intelligent brain and the trained hand of thousands of farmers to make the best possible use of these advantages. In much of this work no large amount of capital is required. The individual, mutual company and irrigation district can reclaim an additional 2,500,000 acres in a manner similar to the successful efforts of like agencies in the past. In this connection it may be a surprise to some to learn that there are about 1,375,000 acres of rich valley land now under ditch, which is not irrigated on account of the lack of settlers. Much of this land is for sale at reasonable prices. The water supply for a much larger area is readily accessible, and both land and water can be united under the most favorable circumstances whenever a sufficient number of citizens join to bring it about.

This dominant industry of California is in no danger of languishing for a few years to come on account of the lack of irrigation canals and storage reservoirs. The State is now filling up at the rate of about 100,000 people a year, and there is sufficient unirrigated land under canal systems to provide for this influx of settlers for the next ten years. The settlers should understand, however, that there are difficulties in the way of irrigation in California, as there are wherever irrigation is practiced. A brief review of some of these may not be out of place.

It has been stated that nearly 1,375,000 acres of fertile valley land are now under ditches but unirrigated. Much of this land has been cultivated for years, but it does not necessarily follow that it is ready to receive water. It may cost on an average of \$15 per acre to construct permanent farm ditches and to prepare the surface for irrigation. Information regarding the methods of irrigation, cost of preparing the land, size and grade of farm ditches, etc., are available in a number of publications, but notably in Farmers' Bulletins 263, 373, 392, 399 and 404 of the U. S. Department of Agriculture. If the task of preparing land is attempted by settlers from the humid states without their first making every effort to avail themselves of the experience of older irrigators, partial failure, at least, will be very apt to result. And, in addition to the perplexities of preparing land for irrigation, others equally trying are quite sure to be encountered in applying water to land. Most beginners use too much water. The evils of this, including the waste of valuable water and injury to crops and soil, are apt to be considerable, and every effort should be made to see that they are avoided. As the land adapted to agricultural purposes becomes settled and as the available water is appropriated, the irrigable area can only be increased by improved methods of use, making it possible to irrigate three acres with the supply now being used on two. Requirements and practice vary with localities, but in every locality there are some careful irrigators whose advice, well mixed with common sense, will help to guide the newcomer along a safe path.

Besides the practical difficulty of preparing land and applying water, the irrigator in California must give careful attention to problems of the rightful ownership and equitable distribution of water. Nature usually provides an abundant quantity of snow on the elevated ranges to supply the soil of the valleys with the requisite amount of moisture, provided that it is properly husbanded and distributed or made available for use at the proper time by storage; but the State, unfortunately, has failed to make adequate provision for determining the rights of claimants to water, or for distributing to each his equitable portion. As conditions now exist, some receive too much, while others receive too little. It is to be hoped that before long the State will do as much toward protecting the rights of irrigators as some of the other Western States have done.



MOUNT TAMALPAIS AND VICINITY.

EDUCATIONAL FACILITIES IN CALIFORNIA.

By Robert Furlong.

Whatever advantages in soil, climate or products a country may possess, the social conditions must also be attractive to make the place desirable for family residence.

California has been endowed by nature with a fertile soil, with a climate unsurpassed, and with rich and varied products that are yielded in abundance. Her citizens, emulating nature's example, have in like liberal spirit established those agencies that contribute to man's social enjoyment.

Schools, churches, libraries, fraternal and other civic organizations are general throughout the State. None of these agencies for good society are wholly lacking, and, except in sparsely settled mountain regions, all are accessible to every resident. Nor are these institutions of the primitive type, but are modern, and, as a rule, housed in well-apportioned buildings.

Of the several social factors named, none is closer to the hearts of the people than the school. In the country the schoolhouse is the central place of interest, and the school the bond that unites many families into one district community. In the city it is valued as an important agency in the training of youth, and considered necessary for good citizenship.

Few, if any, other States or countries have made such liberal provision for a general system of public education as has California. The founders of the State over sixty years ago inserted in its Constitution a section providing for the education of youth. This soon after led to the enactment of school laws, to the establishment of schools and to the building up of a State school system. California's educational system is a growth, the growth of over half a century of careful cultivation. Modeled originally from some of the best systems then in use in older states, it has since been many times amended to meet the needs of a rapidly developing population. In its present advanced form it is recognized by many educators as being the most nearly perfect system of public education in America. Its standards are high, its scope is broad and comprehensive, covering the whole field of school and college education.

To the intending immigrant a knowledge of the educational facilities the State has to offer to its residents is particularly desirable, for it is generally acknowledged that where school facilities are lacking few, if any, parents will care to rear their children, even when other conditions are favorable. On the other hand, a good school nearby often determines the location of the future family home. It can here be truthfully stated that there is no community in California without a school. Elementary schools instructing in all the essentials of an English education are general. The law requires the establishment of such schools and provides for their maintenance.

The conditions under which a new school district may be organized are readily complied with where convenience or necessity indicates a change should be made. By the subdivision of a large district a new community may secure a school where one has not previously been conducted. In this way school districts have been multiplied throughout the State. Many of these have a single-department rural school. When school attendance becomes sufficiently large, several teachers are employed and the pupils are classified into primary and grammar departments. Rural schools of this character are numerous in the fruit sections where the population is dense. Such schools have nearly all the advantages of well-equipped city schools. Towns and villages have graded schools of several departments similar to the graded rural schools described.

Every city is a school district of itself and has a Board of Education and a City Superintendent to direct the work. Each city has its own course of study. Because of the large teaching force, close grading can be secured in a city department. This permits of a course of study somewhat more elaborate than that

prescribed in the County Manual for schools outside city limits. Special supervisors for such studies as drawing, vocal music, manual training and physical education are often employed in city schools to aid the regular class teachers. A teacher in a city department seldom has more than one grade of pupils, whereas a teacher in a rural school usually has several grades.

It does not follow, however, that good work cannot be done in a school of mixed grades. Many of the brightest students in the high schools and in the college courses have come from country schools having a single teacher. It should be borne in mind that this district school with one teacher, so common in the rural sections of California, is an important factor in the State's educational system. It is of a much higher class than the rural schools of many of the older states.

The instruction in the California country district is intended to cover the whole field of elementary education. The pupils of such schools are classified and graded the same as are pupils of town and village schools. A county course of study is the same for all schools, except those in cities. Such a course is followed with nearly as much precision in a single-department country school as in a school of any other class.

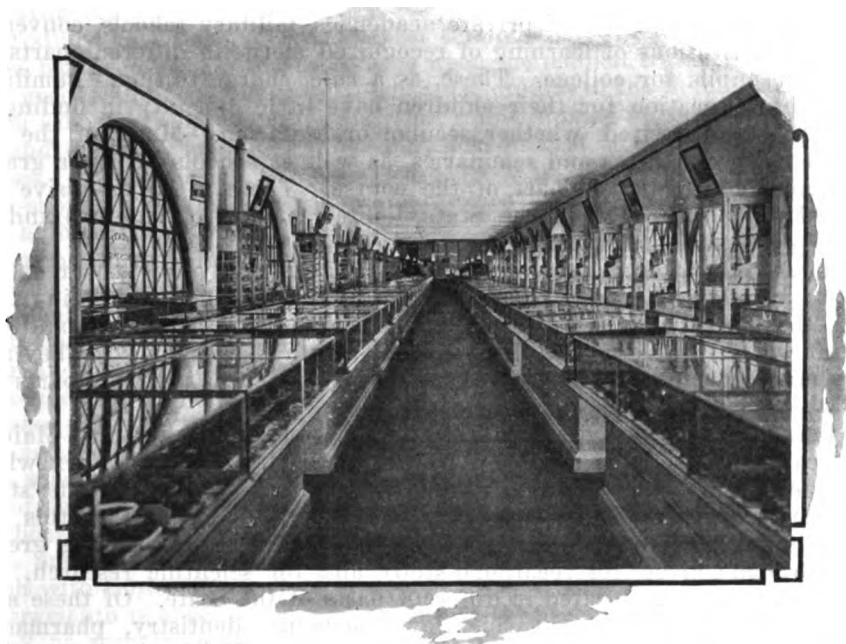
The legal qualifications of teachers are alike for like grades of certificates, the requirements being the same for country and city. Perhaps in no other State or country must teachers in rural schools hold certificates as high as are held by their fellow workers in the city department. These observations are made here to show that a country residence in California does not to any appreciable extent deprive families of the best school privileges. The State aims to educate all of its children, giving to all like privileges, so far as conditions will permit. To this end, through State and county support, appropriations amounting to over eighteen millions of dollars per year are expended on the public schools. This serves to maintain the schools during eight to ten months in the year. Nearly all cities, towns and many country districts have their schools in session ten months each year.

The elementary schools described in the foregoing are objects of special favor by the State, as the State school fund is used exclusively in the payment of their teachers. It is in them that the great mass of the children of California receive their early education. As previously stated, the course is broad and full, including all branches below the high school.

The teachers employed are well qualified for their work, many of them coming to it from professional training schools. But these elementary schools present only one feature of California's educational system. Secondary or high schools form another and a higher class, presenting a different phase of educational activity.

These secondary schools have academic courses that prepare pupils for college entrance. Many of them have additional courses that are elective and do not contemplate later university work. Admission to the secondary schools is to pupils who have finished the elementary course. There are four classes of these schools in the State, known as "city high schools," "county high schools," "district high schools," and "union district high schools." All have much the same plan and purpose, differing only in details of administration and support. Revenue for the maintenance of these high schools comes in part from the State through direct appropriation, but is chiefly levied upon the locality maintaining the school.

Union district high schools are multiplying rapidly throughout the State. They are formed, as the name indicates, by a union of several districts that jointly furnish students and support for one central high school. All taxable property within the area of a union district shares equally in the expense. This class of high schools is very popular in the rural sections, as it brings within the reach of country homes a school that gives all necessary preparations for college. There are now few counties in the State that have not one or several schools of this class. They have in general good, substantial buildings, costing variously from fifteen thousand to a hundred thousand dollars each. City high schools are increasing in number, also greatly improving their equipments.



MUSEUM, STATE MINING BUREAU, FERRY BUILDING, SAN FRANCISCO.



YOSEMITE VALLEY FROM ARTIST'S POINT.

The teachers employed in all high schools must have attainments of a high standard. Seldom any are legally qualified who have not a college degree from some university of good standing.

There are also a number of private academies, military schools, convents and other private institutions of learning of recognized merit, in different parts of the State, that fit pupils for college. These, as a rule, charge tuition. Families preferring private education for their children have little difficulty in finding select schools of the kind desired, whether secular or sectarian. Many of the church denominations have colleges and seminaries, as well as schools of lower grades, in which religious instruction is part of the course. There is an extensive system of parochial schools throughout the State, limited mainly to the cities and larger towns.

The higher education is represented in California chiefly by two great universities that are classed among the leading institutions of learning in America. These are the University of California at Berkeley, Alameda County, and the Leland Stanford, Jr., University at Palo Alto, in Santa Clara County. They are less than fifty miles apart, centrally located and easily reached from all parts of the State.

The first-named is part of the State's public educational system. Maintained at public expense, its doors are open free to all students of either sex who hold proper credentials for admission to its colleges. In the number of its students, the wide range of its college courses and the general facilities that this institution presents for students' work, "Berkeley" takes high rank among great universities. Branch colleges for vocational study and for scientific research, belonging to the university, are located in different parts of the State. Of these a group of colleges is in San Francisco, in which law, medicine, dentistry, pharmacy and veterinary surgery are pursued as professional studies. Tuition is charged in some of these professional courses. The Lick Observatory, perhaps the best-known astronomical station in the world, is a part of the University of California, on Mount Hamilton, near San Jose. Experiment stations for scientific research are also under the direction of the State institution at Berkeley, but are located elsewhere.

No less known or noted is "Stanford," as is popularly called the most richly endowed university in the world at Palo Alto. Its history with that of its illustrious founders is so well known as not to need review here. It is not due to its liberal endowment, however, that this grand university has become known to the educational world. Its plan and purpose, as designed by its founders, its policy as a university, combined with the strength of faculty, gave it high rank from the beginning, which position it has since successfully maintained.

Both of these grand institutions for the higher education are open, practically without tuition fees, to the youth of California. No State in the Union can offer better than this—few, if any, as good.

There are a number of other institutions for the higher education, of lesser rank than the two named, that confer degrees. They are colleges of good standing, mostly under the control of some religious sect and, as a rule, supported by tuition fees.

It will be seen that facilities for the higher or college education are not behind those of older States. In some particulars they are better, which fact induces many students to cross the continent for the purpose of study at the California universities.

There are six normal schools conducted by the State for the professional training of teachers. These are so located in different parts of the State that some one of the schools is easily reached by students from any residence section. From these State normal schools chiefly come the great army of teachers employed in the grammar and primary schools of the State. The professional standard is high for teachers even in the lowest grades. Superintendents of Schools, Supervisors, Inspectors, Boards of Education for cities and for counties, together with a State Superintendent of Public Instruction, and a State Board of Education, direct the work in the public school system.

In recent years there has been a steady trend toward the practical and directly useful branches in the training of youth. Industrial education has so grown in popular favor that it now has strong support in most California communities. Courses of study have been revised to meet this popular demand. The high school curriculum has been readjusted to enlarge upon the manual training work begun in the lower grades and the colleges give entrance credits to the industrial work done in the high school. The large cities maintain well-equipped polytechnic high schools separate and distinct from their other high schools that have only college preparatory courses.

Work-shops and domestic science laboratories are necessary adjuncts to rural and town high schools having elective courses that include manual arts. The State is fostering this form of instruction also by maintaining the **University Farm School** at Davis, and the **State Polytechnic School** at San Luis Obispo. One of the six Normal schools—that at Santa Barbara—has for its special purpose the training of teachers to teach the manual arts and home economics. Practical instruction in gardening and agriculture is given in many rural schools.

The school library as a factor in educational work cannot well be overlooked. Every school district in the State is provided by law with a school library which is maintained by liberal apportionments of school funds each year. The statistical report on school libraries for the year 1910 shows 2,365,600 books in the school libraries of the State. Each county is provided with a Teachers' Library of professional books, which is kept at the county seat and maintained by certificate fees.

Town and city libraries in California are objects of municipal pride. They will match with those of any state or county. The great State Library in the Capitol at Sacramento is classed among the leading libraries of America.

It will be seen from the foregoing that education in California occupies a prominent place, that it is general throughout the State, that it is free to every resident, even in its highest institutions. From the kindergarten through the various elementary and high school grades to the college, inclusive, education is without direct cost to the youth of the State. Families desirous of making homes in California will find here every facility for the education of their children.

The Roman Catholic Church and the Greek Catholic Church were in California before the pioneers. The first made its dramatic entry under the leadership of Father Junipero Serra by way of San Diego, in 1769. The second came in from the North, and established itself in an inconspicuous way at Fort Ross on the Mendocino Coast in 1811. The Spanish Missions, our most interesting historic memorials, are well known, though they figure little in the present religious life of California. The old Greek church at Fort Ross still stands, and despite its primitive character deserves more recognition as a historic memorial than it has ever received.

The present church life of California is practically all the fruit of the immigration which followed upon the gold discovery of 1848. Even the Roman Catholic Church, while its primacy in point of numbers may in some measure reflect its primacy here in point of time, is indebted for its present strength in California to the immigration and development of the State during the last sixty years. The work among the Indians prior to the coming of the Argonauts and the hosts which followed them has indeed some historic and romantic interests, but it has played little or no part in determining present religious conditions.

The gold-seekers with all their eagerness were hardly here before the "soul-seekers," nor did the one make greater sacrifices for the sake of individual gain than did the others for the sake of the general good.

So far as appears the first Protestant Church to be organized in California was organized by the Presbyterians in Benicia, which some imagined then would be a greater city than San Francisco, April 15, 1849. All the other denominations were in the field in quick succession. The first house of worship to be built in California, though not the first one built for California, was the meeting house of the First

NOTE.—The material on Religious Facilities was written by Robert Whitaker.

Baptist Church of San Francisco, put up in the summer of 1849. It was only thirty feet by fifty, with walls twelve feet high, was neither painted nor papered, had a roof of old ship sails from the harbor, and plain benches, yet it cost Six Thousand Dollars in gold. The Episcopalians spent Eight Thousand Dollars on a similar "shack," and when they passed the plates at the first service there was no coin deposited of less value than gold. By 1850 there were nine Protestant churches in San Francisco, and twenty-one in the entire State.

In 1890 the population of California was 1,213,398, that is almost a million and a quarter. Of this number about one-fifth were at that time enrolled as church members. This is understating rather than overstating the matter, for the exact numbers as given by the United States Census for that year were 280,619. In the case of the Roman Catholic Church this does not show the full strength of that communion reckoned in an ecclesiastical way, as 15 per cent of the number reported as of that household of faith was deducted to cover those under nine years of age. The number of Jews is understated as in general only the heads of families are reported. The statistics which follow, however, make the same deductions for later years, so that the numbers are fairly accurate in a relative way.

In 1890 California showed nearly two thousand church organizations (1996), and over fifteen hundred church edifices (505). There were also 425 halls and other buildings reported as used for religious purposes. The total value of the church plant in California at that time was nearly Twelve Millions of Dollars (\$11,961,914), a fairly rich gold mine in itself.

Sixteen years later the United States Government took a religious census of the nation. For purposes of comparison an estimate was made of the population of California in that year. This estimate gave us 1,648,049, the "49" I suppose being a reminiscence of historic days. This estimate was evidently too low for the census of 1900 gave us 1,485,053, and the census just reported for 1910 gives us 2,377,549. It is hardly likely that the population grew only 162,996 from 1900 to 1906, and 729,500 from 1906 to 1910.

The figures of 1906 show a church membership in California of 611,464, as against a church membership in 1890 of 280,619, a net increase of 330,845, or a little more than twenty thousand a year. Population increased in California from 1890 to 1910 at the rate of a trifle more than 58,000 a year. That is the actual church growth on the basis of this comparison was a little more than one-third of the actual population growth from year to year. In the same sixteen years the number of church organizations increased from 1996 in 1890 to 2897 in 1906, an increase of 901, or a little more than an average of one new organization every week. The sixteen years saw a net increase in church edifices of 1016, the number having grown from 1505 in 1890 to 2521 in 1906. The net increase in church buildings was, therefore, more than five every month.

Coming now to analyze the figures for 1906 the relative standing of religious bodies in California according to the latest religious census is as follows:

Total Church Membership.....	611,464
Roman Catholic Membership.....	354,408, that is 58 per cent.
Protestant Membership	236,007, that is 38.6 per cent.

The margin of about three and a half of one per cent covers the Latter Day Saints (Mormons), who are credited with about half of one per cent, and "all other religious denominations."

The principal Protestant bodies, following the same census, ranked in California in 1906 as follows:

Name.	Numbers.	Per Cent
Methodists	64,528	10.6
Presbyterians	37,682	6.2
Baptists	24,801	4.1
Congregationalists	23,690	3.9
Episcopalians	21,317	3.5
Christians	21,033	3.4
Lutherans	11,371	1.9
Total	204,422	33.6



THE UNITED STATES MINT.

The United States Mint at San Francisco, from April 17, 1854, up to June 30, 1910, coined \$1,794,188,698.65 in gold and silver coin.



GENERAL POST-OFFICE, SAN FRANCISCO.

Both of these buildings withstood the fire of April, 1906.

That is among the church members of the State about one-third of them belong to these seven religious bodies. In general every tenth church member in the State is a Methodist, every twenty-fifth is a Baptist, and every fiftieth is a Lutheran. Nearly six out of every ten are Roman Catholics. But it is to be noted in giving these figures that the proportion is relative to church membership, and not to population. As California grew from 1900 to 1910 by an increase of 892,496, that is nearly ninety thousand a year, and had therefore in 1906 in round numbers two millions of people, and as the total church membership at that time was 611,464, not including children under nine years of age, it appears that the total church population was at that time about one-third that of the total population of the State.

As compared with Oregon and Washington California makes a better showing than many would suppose. The figures for the three states are as follows:

State	Church Membership		Gain	Percentage
	1890.	1906.		
California	280,619	611,464	330,845	117.9 per cent.
Oregon	70,524	120,229	49,705	70.5 per cent.
Washington	58,798	191,976	133,178	226.5 per cent.

It will be seen from these figures that California makes a very creditable showing as to every aspect of religious work. Since 1906 all the churches have forged steadily forward. The general feeling among religious workers in California at the present time is that the outlook was never better here for all the higher interests of men.

CALIFORNIA'S CALL TO THE IMMIGRANT.

By John P. Irish.

It is not pretended that California supplies any specific from the wealth of her soil and sunshine that will cure unthrift, bad judgment, and lack of faculty, or make of the do-less a doer. But there is legitimate basis for the belief that here the average man may work in greater comfort more days in the year, and earn his bread easier, than under the conditions that prevail in any other state or country.

California is a winterless land. No deep frosts chill the ground; vine and fig tree do not have to thaw out as a preliminary to going into business as fruit-bearers. All stone fruits, and the fig, pomegranate, orange, lemon, lime, pear, and apple are precocious bearers. The peach will bloom the second year from the pit. On the Mediterranean the olive fruits meagerly at seventeen years of age; here it bears a full crop at seven. In the East he must be a young man who plants a tree expecting to repose in its shade or to eat its fruit. Here old men may plant, and surely expect to enjoy the results. The growth of animals is not checked here by the withering winter, and a yearling horse is the equal of any Eastern two-year-old.

But, it may be asked, is not this precocity of animate and inanimate life compensated by early decay? The answer is, No. That rule has here its exception. The peach tree that blooms before the shell of the pit that bore it is decayed, bears on for thirty years, or more. Olive trees that furnished oil for the sacraments of the old Mission Fathers a hundred years ago, shade the graves of the gardeners who planted them, and ripen their yearly crop with unabated energy.

But men fail in California? Yes. Men who buy land and hire it planted and worked, running it on the absentee landlord system, fail here and everywhere. So do men fail who run manufactures and trade on the same system. But men who take here only so much land as they have the means and the ability to conserve, and can properly till and tend with the labor of their own families, do not fail; for here Nature helps the industrious hand, and nowhere else does intelligent labor add as much to the value of the land, for the reason that here Nature holds one handle of the plow.

The advantage that California has in climate where growth and production go on without pause is seen when the farmer finds his vines and trees, fields and truck-patch producing something for the market every month in the year.

What effect does the climate have on the cost of living? Where the pastures yield natural forage, green or dry, every day; where the water never freezes; where vegetable growth goes on forever, and the storage of vegetables for winter use is never necessary, because they are growing and fresh daily, it is natural that the cost of living should be less than where the summer and fall are spent in hard labor to store food and fuel against the long winter that suspends production. Beef and mutton from the ranges; fish from the waters; fruits and vegetables reach market here in a condition for use more cheaply than elsewhere.

The economic value of climate should be considered in selecting a home; first, in respect to the health of the family, and, second, in respect to the number of days yearly in which your vocation may be followed. California, it may be said, has no endemic diseases. Except in the high Sierra Mountains the snow does not impede outdoor occupation. There are no tornadoes or chilling blasts, nor are there any sudden changes in temperature which imperil life. The heat in the valleys, though high as indicated by the thermometer, is not excessive enough to prevent labor in the fields on the hottest days; because the air being dry, the latent heat of the body is rapidly eliminated, and the blood is kept cool. It will bear repetition that every day in the year is a working day. It follows that it costs less to live in California than in any other state in the Union, and the comfort of life is greater.

The intending settler should fix firmly in his mind the topography of California. We have a winter season called "wet," and a summer season called "dry." In the winter months the average rainfall is about twenty-five inches, distributed through four months of the year, and this is ample to insure abundant crops. California is 850 miles long. Her coast line extends as far as from Boston to Savannah. At the same altitude the climate is practically the same in the north as in the south of the State; hence San Diego in the south and the country 600 miles to the north produce identically the same crops. On the west slope of the Sierra Nevada Mountains, at an elevation of from 400 to 1,000 feet, is the famous foothill warm belt, stretching from Shasta to Kern County, and noted for the superiority of its fruits, including the fig, orange, lemon, and olive.

There is one great valley; its south end rests on the Tehachapi Mountains, and its north end is lifted up by Mount Shasta. This great trough sags in the middle, and the rivers that run from each end escape into San Francisco Bay through a common delta. From these rivers we name each end of the valley, thus giving the impression that there are two valleys. The north end of the valley is the valley of the Sacramento, with an area of 4,000,000 acres. The south end is the valley of the San Joaquin, with 7,000,000 acres. This valley is the seat of wheat and raisin culture. On the west of this great valley rises the Coast Range, in which lie a number of fertile and extensive valleys, such as Santa Maria, Sonoma, Santa Clara, Vaca, and Suisun. In most of these fruit growing is the principal industry. The slopes of the Coast Range toward the sea and the high Sierras, are favorable for dairying. To some extent, therefore, the settler is guided in the selection of his residence by the business he desires to pursue.

We expend annually over \$7,000,000 for the maintenance of our public schools. The State is entirely out of debt. The financial report shows that the State debt is about \$2,500,000, but this is only a form of statement. There is that amount of State bonds, but the bonds are owned by the State and are covered into the State school fund. The State pays the interest to the State school fund, which is annually apportioned to the public schools. If California has a reputation for public extravagance it is undeserved, and the intending immigrant need not hesitate for fear his interests will suffer by reason of high taxation, due to the waste of public money.

It is not given to all men to be wealthy; but every original fortune in this country was founded in some man's determination to make a living and provide for life's decline when labor is impossible. Immigration flows where a living may be made under the most favorable conditions. The variety of resources in California

invites an equal variety of tastes, training, and experience. If a man desires to mine, along the western flank of the Sierra Nevada Mountains for 800 miles is the world's greatest gold field. It has already yielded \$1,000,000,000 from the merest scratching of its surface.

Horticulture here rises to the rank of a profession. Our soil and climate are so adapted to it that fruits from every zone may be grown. The clemency of our climate and its halcyon quality invite enterprise and ingenuity to experiment in all horticultural refinements. No equal area of the earth's surface has produced profitably a variety of the fruits of tree, vine, and shrub equal to that of California.

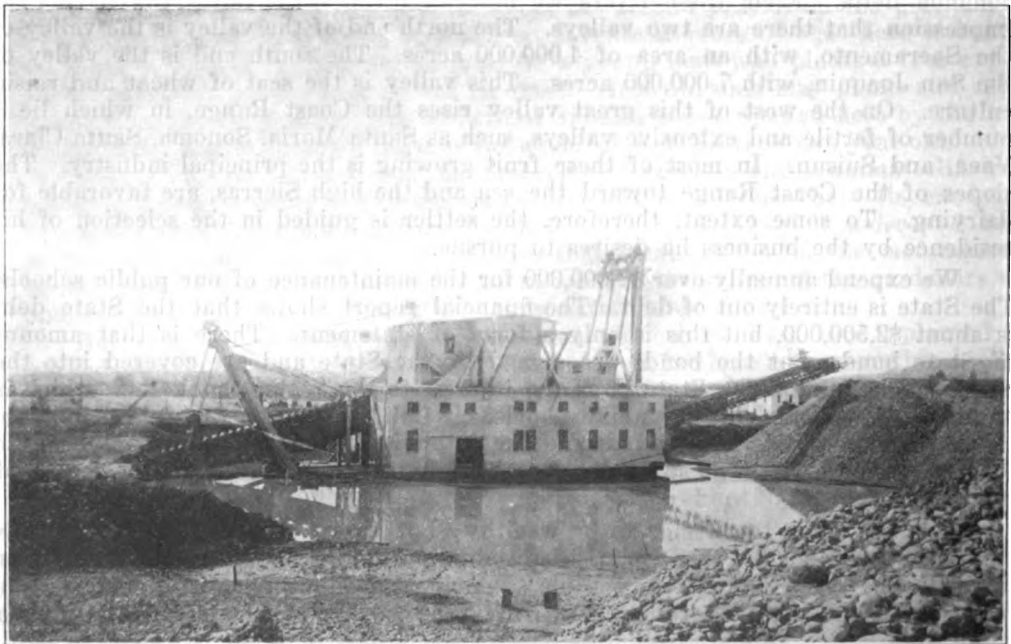
The beginning of all successful manufacture is in the transmutation of the most abundant raw material into more merchantable or more permanent forms for transportation and use at a distance. The State is not yet sufficiently supplied with plants for drying and canning our surplus fruits, or for reducing them to fine jellies, jams, pickles, pastes, etc. Immigrants who have a taste for these arts will find here a growing field.

No place presents better facilities for variety farming as it is practiced in the Mississippi Valley. With a small tract of land which may be cared for by the labor of an ordinary family, with some orchard or vineyard bordered with almond and English walnut trees, producing some alfalfa and grain, and carrying some cows, pigs, and chickens, the owner will find something produced for market every day in the year, while his family living will nearly all come direct from the soil he tills.

Since the above was written the people of the State have voted a bond issue of \$18,000,000 for the construction of good roads upon the most modern plans and under the best engineering supervision. This supplements bonds issued by several counties for the construction of good roads, fine examples of which may be seen in San Joaquin, Los Angeles and Santa Clara Counties, and also in Alameda County, where the construction has been borne by the ordinary tax levy, without a bond issue.

These expenditures will endow the State with an asset, and country life with an economical convenience in value far exceeding the cost.

The State has also voted a bond issue of \$5,000,000 to equip the Panama-Pacific Exposition, which is to emphasize the completion of the Panama Canal. This expenditure will be returned many fold in benefits to the people and industries of California.



DIRIGIBLE GOLD DREDGER.
Operated by Electric Power.

[illegible]

FREE INFORMATION

CALIFORNIA

BOARD
CALIFORNIA DEVELOPMENT

14 JUL 1964

San Diego's Panama-California Exposition in 1915

SAN DIEGO'S PANAMA-CALIFORNIA EXPOSITION was organized and incorporated in September, 1909. The purpose of the exposition is to commemorate the completion of the Panama Canal and to exploit the resources, industrial and commercial, of the Southwest, Southern California and the West Coast of Mexico, Central and South America.

The exposition will open on January 1, 1915, and it will close on December 31st. The enterprise is completely organized, with U. S. Grant, Jr., as President and D. C. Collier as Director-General. There are two funds of \$1,000,000 each from which the expenditures will be made for buildings and maintenance. The first of these funds was raised by subscriptions of stockholders of the corporation, and the second was voted in bonds for the improvement of Balboa Park, which will be the site of the Mission City in which the exposition will be held.

At the time these funds were contributed San Diego had a population of only 40,000. The per capita subscription to the exposition stock, therefore, was \$20; and the total per capita for both funds was \$40. No other city in the world has ever manifested such substantial public spirit in similar circumstances.

Preparations for the exposition are now complete, and ground will be broken for the first permanent buildings on July 19th. The occasion will be marked by elaborate civic ceremonies, a series of historical and picturesque pageants, including a parade of floats representing the twenty-one missions founded by the Franciscan Fathers, and a fiesta or carnival of unexampled splendor.

The first structure to be dedicated will be the administration building. The architecture of the group of buildings will be the Spanish-Colonial style, based on the Mission type so familiar to Californians. This feature of the exposition is under the direction of Bertram G. Goodhue, of the firm of Cram, Goodhue & Ferguson of Boston and New York, and the leading authority on Spanish-Colonial architecture. The buildings will be constructed by Frank P. Allen, Jr., Director of Works. The grounds will be laid out and planted by John C. Olmstead, of the firm of Olmstead Brothers, landscape architects of Boston.

The exposition itself will be novel in character, comprising a distinctive exhibition of ethnological, aboriginal and archæological features peculiar to the countries included in the scope of the exposition; a comprehensive demonstration of the great reclamation and irrigation projects of the Southwest and the arid regions of Mexico; and a practical presentation of the handicrafts and industries of every section tributary to Southern California, of which San Diego is the seaport destined to be the gateway of the Southwest when it shall be the first port of call in territory of the United States north of the Panama Canal and the terminal of the San Diego and Arizona Railway, closing the gap between Pacific tidewater and Yuma and connecting the transcontinental railroads with the shortest route between the Middle West and the new highway of commerce between the canal and the Orient.



CALIFORNIA

RESOURCES AND POSSIBILITIES

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(box on sh)



ANNUAL REPORT
CALIFORNIA DEVELOPMENT BOARD
SAN FRANCISCO, CALIFORNIA

UNIVERSAL EXPOSITION SAN FRANCISCO

BY AUTHORITY OF THE

United States Government

February 20 to December 4, 1915



EXPOSITION TOWER
Overlooking the Golden Gate, 850
feet in height, base 300 feet
above the sea level

The whole world has believed, and the American people have demanded, that an event so important to the comity and commerce of nations as the completion and opening of the Panama Canal, should be fittingly celebrated. When the Congress of the United States, with the approval of the President of the United States, selected the city of San Francisco as the official site for this great celebration, the people of the whole State of California determined to put forth endeavors commensurate with the dignity and significance of such an honor.

Within a remarkably short space of time a fund approximating eighteen millions of dollars gold was accordingly raised for this purpose through appropriations by the State and Counties of California, the City of San Francisco, and by subscription of its citizens.

The six hundred acres included in the Exposition grounds proper adjoin a great military reservation with its forts, parade grounds, and a magnificent city park along whose front the ocean breaks with never-ceasing roar.

The exhibit palaces of past Expositions have been detached buildings imperfectly correlated to the whole, too big for great beauty, and with little attempt at color scheme. The creations into which San Francisco invites the products and the peoples of the globe are to be a harmony of plan and color. There are to be no detached buildings, but great separate courts, each in the style chosen by the architectural genius into whose care its preparation has been committed; and approved by a board of the most famous architects in the country. Everywhere there is to be harmony of form and color. These courts are to be so numerous that the mind of the visitor will be confused by the multiplicity of their wonders—a modern maze, in which one may be lost for a week and finally go away wishing for more days to see.

**CALIFORNIA INVITES YOU TO THE
EXPOSITION CITY, 1915**

CALIFORNIA

RESOURCES AND POSSIBILITIES

TWENTY-SECOND ANNUAL REPORT

OF THE

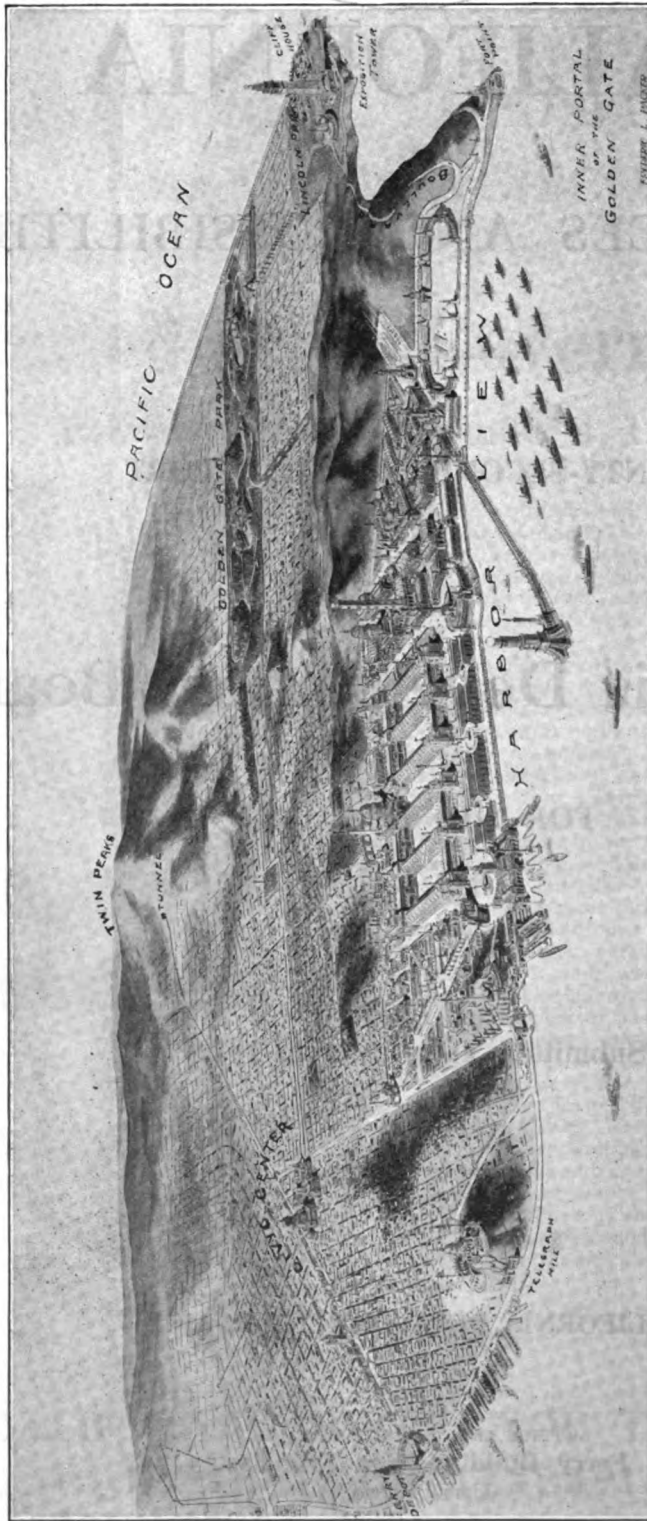
California Development Board

FOR THE YEAR 1911

Submitted as of March, 1912

**PUBLISHED BY THE
CALIFORNIA DEVELOPMENT BOARD**

**OFFICE AND EXHIBITION HALL
Ferry Building, San Francisco
UPPER FLOOR**



VIEW OF SAN FRANCISCO.

Showing the water front and site of the Panama-Pacific International Exposition.

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by
California Development Board



STATE CAPITOL, SACRAMENTO.

TWENTY-SECOND ANNUAL REPORT
OF THE
CALIFORNIA DEVELOPMENT BOARD

To the Members of the Board:

The work of the California Development Board for the year ending March 31, 1912, has marked an epoch in our history. The record of achievement and the extension of influence is greater than that of any previous year. The Board is recognized within this State as the central organization and has commanded the attention and respect of all other organizations and forces in the State. The Board has attempted to realize its responsibilities in advancing the development of the great empire of California and has been world-wide in its activity in supplying information of what the State has to offer the homeseeker, investor, manufacturer and tourist.

During the year the Board has been operating through well organized departments known as the Publicity Bureau, the Exhibit and Information Bureau, the Statistical Bureau and the Organization Bureau. In addition to this work the Board has sustained a very close relation and has supplied a very helpful service to the Panama-Pacific Exposition. A special Bureau of Investigation into immigration conditions was also established during the year.

Publicity Bureau

Through the activities of the Board world-wide publicity has been secured for California. It is impossible even to estimate the extent and influence of this publicity, due to the fact that the Board has not been engaged in the business of advertising its own organization, but has exploited the State and the Exposition directly and indirectly through many and diverse agencies. However, an indication of the sources and manner of these publicity campaigns may be briefly indicated.

Your Manager spent six months of the year in the East and in Europe on three separate trips, directly engaged in world-wide publicity work. Under his personal supervision the Board had representation and exhibits at the Pittsburg Land Show, the New York Land Show, the Chicago Land Show, at the Turin International Exposition in Turin, Italy, and at Berlin, Germany. On these occa-

sions, on a conservative estimate, eight or nine million people were brought into physical contact with California's resources, and vast quantities of literature on California were distributed.

The press was furnished with innumerable articles concerning these exhibits, which were reproduced in hundreds of papers. Nearly all the leading European papers had articles on California's exhibit at Turin and some of the magazines published illustrated articles of like nature.

Your Manager represented the Board in the Western Development League meeting at Portland, Oregon, in May, and participated in the initiation of the "Western Governors' Special," which made an extensive tour throughout the East. Through the direct influence of this Board, this special train was equipped and financed, and the Board itself fitted out a car of California's products and had a personal representative on the entire trip. The largest newspapers in the East published descriptions of the California exhibit, and the "Special" was conceded to be the greatest publicity move of its kind ever attempted.

The Board was directly represented at the meeting of the Western Association of Commercial Executives at Boise City, Idaho; on the centennial excursion to Astoria, Oregon; on the Merchants Association excursion to Klamath Falls, Oregon; at the Municipal Exposition at Chicago; at the National Irrigation Congress, Chicago; at the Trans-Mississippi Commercial Congress at Kansas City, Mo.; and at the meeting called by the Department of Commerce and Labor to discuss immigration questions, at Washington, D. C.

In California itself, the Board has been represented at all important gatherings, viz: annual banquet of Grass Valley Chamber of Commerce; meeting of San Mateo County Development Board; meeting at Crescent City, to help organize a commercial club for Del Norte County; Raisin Day Carnival at Fresno; South San Joaquin County Irrigation Excursion; annual meeting of Oroville Chamber of Commerce; meeting of Sonoma County Development Association at Santa Rosa; State Convention of Supervisors at Napa; Merced Merchants Carnival and Produce Exposition; on excursion of Merchants Association of S. F., through the mining counties of the State; at meeting in Hanford to help organize a Kings County promotion body; at ground-breaking exercises for the San Diego Exposition; Sebastopol Apple Show; State Fair at Sacramento; Rural Education Conference, held at the State University Farm at Davis; at the Watsonville Apple Show; meeting of Watsonville Apple Association; meeting of San Jose Chamber of Commerce; Oroville Orange and Lemon Exposition; Petaluma Poultry Show; annual banquet of San Francisco Chamber of Commerce; annual banquet of Porterville Chamber of Commerce; and annual banquet of the Los Angeles Chamber of Commerce.

Various representatives of the Board have been constantly traveling throughout the State gathering information, lecturing on the State, and arousing greater interest and knowledge on the part of our own people.

The Board has furnished exhibits, photographs, publicity material and stereopticon slides to all sorts of organizations and newspapers. Articles on various phases of California development have been furnished to magazines and newspapers throughout the State and country. The newspapers of California have been exceedingly generous in their space in describing the activities of the Board, and hundreds of columns alone were devoted to the meeting of the Board at Los Angeles. The press of the interior almost without exception, published the notices and information supplied by the Board. It is the policy of the Board to encourage and induce all California newspapers to devote large space and editorial attention to the development of California's industries and resources, and the attitude of the press in this important matter is more favorable than ever before.

The Board issues a bulletin on conditions in California month by month. Three hundred and fifty thousand of these bulletins have been issued during the year and are mailed regularly to similar organizations, newspapers, publicity officials, individual members, trade organizations throughout the world, consuls of the

United States in foreign countries, and libraries. A tremendous volume of publicity flows from this source alone. Thirty thousand copies of the Annual Report of the Board were printed and distributed in all parts of the world, besides three thousand reports of the proceedings of the Counties Committee held at Eureka, and three thousand copies of the report of the meeting held at Los Angeles.

The Board has attempted during the year to estimate and concentrate the vast amount of publicity going out from all sources in the State, and is ever alert to raise the standard of such publicity and to make it more definite and effective. All of the publicity and the entire equipment of the Development Board, both in San Francisco and abroad, has been used for the benefit of the Panama-Pacific International Exposition. The Board cordially recognizes that the Exposition itself is not merely a California enterprise, but is national and international in its character and scope. It is recognized, however, that the construction and presence of this great international enterprise in San Francisco will have the most profound effect upon western development.

Lecturers have during the year given a series of illustrated lectures at the Board rooms in the Ferry Building; at the Retailers Industrial Exposition in San Francisco; at the Municipal Exposition in Chicago; and at the Land Shows at Pittsburg, New York, Chicago, and Los Angeles, with a combined eastern attendance of 80,000 during three weeks. At the Chicago Land Show over 150,000 attended the lectures on California delivered by various lecturers. Information booths were maintained in four localities in San Francisco during the N. E. A. Convention, and the International Sunday School Convention. Also at the State Fair, Sacramento, at the Brewers Convention in Chicago, and at the various land shows.

Exhibit and Information Bureau

The average daily attendance at the Exhibit Room has been 650, making a total for the year of 200,000. About one-half were strangers from outside of California; most of the remainder were from rural California.

Over 1300 lectures have been given here on various sections of the State; the average attendance has been twenty; total attendance, over 25,000. The average number of inquiries after each lecture has been five. The average time each visitor stayed in the Exhibit hall was thirty minutes; about one-half took literature, and one-sixth signed the register.

The exhibit and fruit has been entirely renewed and a great quantity of new fruit processed. Sufficient for home purposes and also to equip a number of other exhibits. During the year six new counties have taken space, viz: Mendocino, San Mateo, Monterey, San Benito, Lassen and El Dorado. Six new stands have been put in by the following counties: Sacramento, Monterey, Merced, Colusa, Madera and San Benito, and two more—Mendocino and San Mateo—are in process of construction. These stands are made of various natural woods and present a fine appearance.

Two exhibits of general products were assembled for the Turin Exposition. A very fine line of the fruits and flowers of Luther Burbank was processed for use and displayed at the Eastern land shows, where it attracted great attention. This exhibit was also displayed at Pittsburg, New York and Chicago.

The Board supplied exhibits of fruits and products at the Palace Hotel during the National Education Association and during the Eagles' Convention. Board installed an exhibit at the Brewers' Congress exposition at Chicago. Supplied an exhibit for the Southern Pacific Company for permanent use at Philadelphia, and others for local firms at Chicago, New York, Pittsburg and Philadelphia. Supplied the North of Bay Counties Car with an exhibit of Burbank products. Installed an exhibit at the State Fair in Sacramento. Supplied three eastern and three European lecturers with slides on California. One of the latter is lecturing in Esperanto and has very large audiences all through western Europe.

An Information Desk is maintained in the Board rooms, from which reliable

information on the State can be secured and where literature on the counties of the State is distributed to interested inquirers.

Statistical Bureau

During the past year very intensive work has been done by this Bureau in the way of gathering data and statistics and furnishing information in the way of State statistics to many inquirers. The consistent work of this bureau for many years has resulted in the collection of the most accurate, comprehensive and comparative figures of California's resources which exists in the State. This department is in immediate touch with conditions and changes in every direction and acts as a clearing house for all other statistical bodies in the State. It is frankly recognized, however, that there are tremendous gaps in precise and scientific information as to the needs and opportunities of the State. It is therefore, the intention of the Board to greatly extend the work of this Bureau and to undertake the collection of scientific information along lines never before attempted. Openings in various lines of industry, mercantile business, manufacturing enterprises, etc., have been frequent subjects of inquiry as well as locations for special enterprises in one or another branches of agriculture or horticulture. These inquiries have come from abroad as well as from the United States. Our own railroad lines as well as eastern connections, industrial corporations, newspapers and magazines, mercantile agencies, investment houses, etc., have been furnished with special estimates of various crop productions and values, and the probability of the permanence of certain lines of industries. This Bureau is charged with the work of collecting the data for the preparation of the Annual Report, which is submitted herewith. Also with the preparation of the Monthly Bulletin which gives a review of conditions in California every month.

Immigration

One of the most important problems for California is the probable influx of foreign immigrants after the opening of the Panama Canal. A great deal of attention has been given to this subject by the thoughtful people and public organizations in the State, and frequent discussion and investigation has been made into the subject. This Board was considered to be the logical organization to collect all the data bearing upon this important subject and to outline the necessary steps which should be taken in anticipation of the expected situation.

During the year the Board has maintained a Bureau of Investigation into this subject and has collected a considerable body of data and material bearing on the subject. Affiliation has been made with the Department of Commerce and Labor at Washington, and your Manager assisted in the formation of a national organization of state immigration commissioners. Personal investigation was made by your Manager of the conditions in Europe and practically every European country was visited. Numerous meetings and conferences on the subject have been held in California, notably a conference in San Francisco at which Dr. Edward E. Steiner of Grinnell, Iowa, was the principal guest and speaker. This subject was discussed by experts at the Counties Committee meeting of the Board, held at Los Angeles, at which occasion the presence and advice of Robert Watchorn, another distinguished expert on the subject, was secured. Your Manager has made addresses on the subject at various points in the State and has published extensive articles on the subject setting forth the results of the investigation as far as it has proceeded. The Board will be prepared within a short period, to recommend a program and policy on the subject.

Bureau of Organization

The Board sustains a very close relation with the interior organizations of the State. Various representatives of the Board are constantly in touch with the activities of these local bodies and co-operate with them in developing their efficiency and scope. Hearty co-operation is maintained between these bodies and concentrated action on matters of State-wide concern may be secured with considerable facility. Numerous meetings of representatives of these bodies are held.

During the year two notable gatherings have been held, one at Eureka in June, at which a very valuable discussion was pursued on the development of the northern part of the State. The published report of this meeting was a decided contribution to literature on California development. In January, the Board conducted its largest and most successful Counties Committee meeting at Los Angeles. Four special trains carried the delegates from the northern part of the State, and some 1200 delegates were present. The theme of this meeting was California's Preparation for the Opening of the Canal, for the Coming of the Immigrant and for the Panama-Pacific Exposition. This meeting has had a profound effect upon intelligent State-wide unity.

The plans of the Board for the next three years involve an even closer relation and co-operation between the commercial bodies of the State, and considerable advance in this direction may be anticipated. All events and forces are favorably co-operating to make the period of the next three or four years the time of California's greatest opportunity and harvest. The commercial organizations of the State must be greatly strengthened and articulated to meet the very evident situation.

General Work

During the year the Board has carried on its routine work in many directions. The office force is composed of trained and efficient experts. A large correspondence on State matters is constantly carried on, and answers are given to all sorts of inquiries to homeseekers, settlers, investors, manufacturers and tourists. The Board necessarily keeps in vital touch with all movements concerning general development of the State.

Many services are rendered by the general organization to other bodies—e. g., the Board furnished to the State of California the services of its manager and equipment, without charge, to collect and exhibit the splendid California display at the International Exposition at Turin, Italy. The State was thus able to make a notable showing at that point at an expense of at least one-third of the amount such an exhibit would ordinarily cost. Several gold medals, Grand Prix and other awards were secured for California at this Exposition.

The Board has rendered many special services to the Panama-Pacific Exposition. Your Manager represented the Exposition throughout Europe and was able to give to it, the first European wide publicity. President Gillett and your Manager made a special eastern trip as commissioners of the Exposition to various legislatures and organizations of the South, visiting Louisiana, Georgia, South Carolina, Virginia, Kentucky, Mississippi and Washington, D C.

The financial condition of the Board is good, though the wide activities of the past year have taxed our resources. This has necessitated the carrying on of our work with the most rigid economy, and the year closes with but a small balance in the treasury.

GROWTH IN POPULATION AND DEVELOPMENT SINCE CALIFORNIA BECAME A STATE.

Year	Population of State	No. farms	Average acres per farm	Average value of land and buildings per acre
1850.....	92,597	878	4,465.6	0.99
1860.....	379,994	18,716	466.4	5.58
1870.....	560,247	23,724	481.7	12.36
1880.....	864,694	35,934	461.8	15.79
1890.....	1,208,130	52,814	405.	32.53
1900.....	1,485,053	72,542	397.4	24.56
1910.....	2,377,549	88,197	316.7	51.93

CALIFORNIA DEVELOPMENT BOARD

FARM VALUES.

The following comparative tabulation of California's farm lands and values is given from the Census report:

	1910	1900	Per cent Inc. 1909 1910
All farms.....	88,197	72,542	21
Total acreage.....	27,883,000	28,829,000	*3
Improved acreage.....	11,380,000	11,959,000	*5
Average acres per farm.....	318	397	*20
Value of land and buildings.....	\$1,448,560,000	\$707,913,000	105
Value of land.....	1,315,718,000	630,445,000	109
Value of buildings.....	132,842,000	77,468,000	71
Value of implements and machinery.....	36,393,000	21,312,000	71
Average value an acre of land and buildings.....	51.95	24.56	112
Average value an acre of land alone.....	47.19	21.87	116
Expended for—			
Labor.....	49,735,000	25,845,000	92
Fertilizers.....	2,132,000	937,000	128

*Decrease.

SIZE OF FARMS.

Size group	Number of farms		Increase	Per cent Distribution
	1910	1900	Number	1910
Under 3 acres.....	1,269	1,492	-223	1.4
3 to 9 acres.....	9,324	5,354	3,970	10.6
10 to 19 acres.....	11,932	8,236	3,696	13.5
20 to 49 acres.....	20,614	13,110	7,504	23.4
50 to 99 acres.....	10,680	8,067	2,613	12.1
100 to 174 acres.....	12,015	13,196	-1,181	13.6
175 to 259 acres.....	4,689	4,635	54	5.3
260 to 499 acres.....	7,862	8,370	-508	8.9
500 to 999 acres.....	5,119	5,329	-210	5.8
1000 acres and over.....	4,693	4,753	-60	5.3
Total.....	88,197	72,542	15,655	100.0

A minus sign (-) denotes decrease.

The *increase* of small farms is to be noticed.

Irrigation. Of the 88,197 farms in the State, 39,352, or 46.6 per cent, were irrigated in 1909. The acreage reported as irrigated in 1909 was 2,664,104 acres, or 23.4 per cent of the improved land in farms. The area to which enterprises existing in 1910 were capable of supplying water was 3,619,378 acres, and the total acreage included in irrigation projects, complete or under way, in 1910 was 5,490,360 acres.

POPULATION, NUMBER OF FARMS AND FARM ACREAGE.

Census year	Population	Farms		Land in farms		Per cent of land area in farms	Per cent of farm land im- proved
		Number	Per cent of in- crease	Acres	Improved land (acres)		
1910.....	2,377,549	88,197	21.6	27,931,444	11,389,894	28.0	40.8
1900.....	1,485,053	72,542	37.1	28,828,951	11,958,837	28.9	41.5
1890.....	1,213,398	52,894	47.2	21,427,293	12,222,839	21.5	57.0
1880.....	864,694	35,934	51.5	16,593,742	10,669,698	16.7	64.3
1870.....	560,247	23,724	26.8	11,427,105	6,218,133	11.5	54.4
1860.....	379,994	18,716	2,046.3	8,730,034	2,468,034	8.8	28.3
1850.....	92,597	872		3,893,985	32,454	3.9	0.8

ACREAGE AND VALUE OF FARMS

9

ACREAGE AND VALUES OF FARMS.

Census year	Average acres per farm	Average value per farm. ¹				Average value of land and buildings per acre
		All farm property	Land and buildings	Implements and machinery	Domestic animals, poultry and bees	
1910.....	316.7	\$18,308	\$16,447	\$414	\$1,447	\$51.93
1900.....	397.4	10,980	9,759	294	928	24.56
1890.....	405.0	*14,697	13,180	278	*1,240	32.53
1880.....	461.8	*8,683	7,293	235	*1,555	15.79
1870.....	481.7	7,778	5,953	224	1,600	12.36
1860.....	466.4	4,642	2,603	137	1,901	5.58
1850.....	4,465.6	8,404	4,443	119	3,843	0.99

¹Averages are based on "all farms" in State.

*Include estimated value of range animals.

FARM TENURE.

Tenure	1910	1900
Number of all farms.....	88,197	72,542
Farms operated by owners and managers.....	70,049	55,782
Farms consisting of owned land only.....	56,500	44,318
Farms consisting of owned and hired land.....	10,132	8,211
Farms operated by managers.....	3,417	3,253
Farms operated by tenants.....	18,148	16,760
Share tenants.....	6,135	7,686
Share-cash tenants ²	704	
Cash tenants.....	9,737	9,074
Tenure not specified ³	1,572	

²Share-cash tenants were doubtless largely included with share tenants in 1900, 1890 and 1880.

³Prior to 1910 non-specified tenants were included with cash tenants.

FARM MORTGAGES.

Class	Owned farms ¹		Owned farm homes	
	1910		1900	
	Number	Per cent ²	Number	Per cent ²
Total.....	66,632	.....	51,093	.....
Free from mortgage.....	39,368	59.5	33,620	67.8
Mortgaged.....	26,749	40.5	15,979	32.2
Unknown.....	515	.....	1,494	.....

¹Includes all farms owned in whole or in part by the operator.

²Per cent of combined total of "free from mortgage" and "mortgaged."

VALUE OF MORTGAGED FARMS AND MORTGAGE DEBT.

	Owned farms or farm homes mortgaged		Increase ¹	
	1910 ²	1890 ³	Amount	Per cent
Number.....	21,430	13,732	.....	.....
Value—land and buildings.....	\$250,199,190	\$154,256,866	.....	.....
Amount of mortgage debt.....	60,036,660	46,767,837	.....	.....
Per cent of debt to value.....	24.0	30.3	.....	.....
Average value per farm.....	\$11,675	\$11,233	\$ 442	3.9
Average debt per farm.....	2,802	3,406	-604	-17.7
Average equity per farm.....	8,873	7,827	1,046	13.4

¹A minus sign (-) denotes decrease.

²Includes only farms consisting wholly of owned land and reporting value of farm and amount of debt.

³Includes all owned farm homes, estimates being made of value of farms and amount of debt for all defective reports.

FARM OPERATORS.

Color and nativity	Farm operators							
	Total		Owners	Tenants	Man-agers	Per cent of total		
	Number	Per cent distribution				Owners	Tenants	Man-agers
Total	88,197	100.0	66,632	18,148	3,417	75.5	20.6	3.9
Native white	58,926	66.8	45,780	10,505	2,641	77.7	17.8	4.5
Foreign-born white	26,193	29.7	19,914	5,565	714	76.0	21.2	2.7
Negro and other non-white	3,078	3.5	938	2,078	62	30.5	67.5	2.0

DENSITY OF POPULATION.

The returns of the thirteenth census, while most gratifying to everyone interested in California, were not surprising to those who studied the steady movement of homeseekers toward the West and into the State.

In 1900, twenty States ranked ahead of California in population. In 1910, but eleven stood before her. In the ten-year period she had outstripped nine of them, taking twelfth place.

The increase during the last decade has not been gained under the impulse of a desire to participate in the golden harvest of rich placers, that caused the rush of earlier years from all over the world, but has been steady, substantial and permanent homeseekers, most of them from the Middle West, who desired to live under the beneficent conditions to be found in California.

This increase may be better realized by a comparison with that of previous decades.

Years.	Population.	Years.	Population.
1850	92,597	1890	1,208,130
1860	379,994	1900	1,485,053
1870	560,247	1910	2,377,549
1880	864,694	1911 (Gov's Est.)	2,540,000

The rate of increase from 1900 to 1910 was 60.01, larger than that of any state outnumbering her in population, while the actual increase, 892,496, was greater than any with a larger percentage of increase.

Density of Population.

The increase in the density of population per square mile in the same periods more clearly illustrates the wonderful growth of the population of California. It is as follows:

Years.	Density.	Years.	Density.
1850	0.6 per square mile	1890	7.8 per square mile
1860	2.4 per square mile	1900	9.5 per square mile
1870	3.6 per square mile	1910	15.2 per square mile
1880	5.5 per square mile		

There is a density of but 15.2 persons to the square mile.

That California is able to support a population far greater than she now has, is evidenced by the appended table, giving the average number of inhabitants per square mile in ten States and the number California would have with the same density of population.

State.	Average Number People to Square Mile.	Population California with Same Density.
Rhode Island	508.5	79,350,000
Massachusetts	418.8	65,324,400
New Jersey	337.7	52,673,500
Connecticut	221.3	34,527,750
New York	191.2	29,823,350
Pennsylvania	171.0	26,872,600
Maryland	130.3	20,324,200
Ohio	117.0	18,267,650
Delaware	103.0	16,096,000
Illinois	100.7	15,707,200

The San Joaquin Valley with 7,000,000 acres, and the Sacramento Valley with 4,000,000 acres of rich agricultural land, can give to 550,000 families a farm of 20 acres each, ample for their sustenance, to say nothing of the Santa Clara, Napa, Sonoma and other rich valleys throughout the State.

The actual increase and the percentage of increase during the decade by counties is shown by the following:

LIST OF COUNTIES AND POPULATION IN 1910 AND 1900, WITH PERCENTAGE
OF INCREASE OR DECREASE — COUNTIES' PROGRESS AS
TOLD BY THE CENSUS.

Counties.	1910.	Percent of Increase, 1900-1910.
Alameda	246,131	89.0
Alpine	309	-39.2
Amador	9,086	-18.2
Butte	27,301	59.4
Calaveras	9,171	-18.1
Colusa	7,732	4.7
Contra Costa	31,674	75.4
Del Norte	2,417	0.3
El Dorado	7,492	-16.5
Fresno	75,657	99.8
Glenn	7,172	39.2
Humboldt	33,857	24.9
Imperial	13,591	....
Inyo	6,974	59.4
Kern	37,715	128.0
Kings	16,230	64.4
Lake	5,526	-8.1
Lassen	4,802	8.6
Los Angeles	504,131	196.0
Madera	8,368	31.3
Marin	25,114	59.0
Mariposa	3,956	-16.2
Mendocino	23,929	17.4
Merced	15,148	64.4
Modoc	6,191	21.9
Mono	2,843	31.6
Monterey	24,146	24.6
Napa	19,800	20.6
Nevada	14,955	-15.9
Orange	34,436	74.8
Placer	18,237	15.1
Plumas	5,259	12.9
Riverside	34,696	93.9
Sacramento	67,806	47.6
San Benito	8,041	21.2
San Bernardino	56,706	103.0
San Diego	61,665	75.8
San Francisco	416,912	21.6
San Joaquin	50,731	43.1
San Luis Obispo	19,383	16.5
San Mateo	26,585	119.8
Santa Barbara	27,738	45.4
Santa Clara	83,539	38.7
Santa Cruz	26,140	21.0
Shasta	18,920	0.9
Sierra	4,098	0.2
Siskiyou	18,800	10.9
Solano	27,559	14.5
Sonoma	48,394	25.8
Stanislaus	22,522	136.7
Sutter	6,328	7.5
Tehama	11,401	3.7
Trinity	3,301	-24.7
Tulare	35,440	93.4
Tuolumne	9,979	-10.6
Ventura	18,347	27.7
Yolo	15,926	16.9
Yuba	10,042	16.5
California	2,377,549	60.1

The Governor of the State estimates that the increase since the census was taken, brings the total population up to 2,500,000.

Distribution of Population.

The following tables showing the Counties of the four leading sections of the State give some instructive figures for comparison of the growth of each section:

BAY COUNTIES

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10-yr. Inc.
San Francisco.....	416,912	342,782	21.6	47	8870.0	1576.8
Alameda.....	246,131	130,197	89.0	764	321.9	151.5
Contra Costa.....	31,674	18,046	75.4	728	43.5	18.7
Solano.....	27,559	24,143	30.6	900	30.6	3.8
Napa.....	19,800	16,451	20.6	780	25.4	4.1
Sonoma.....	48,394	38,480	25.8	1,620	29.9	6.1
Marin.....	25,114	15,702	59.0	549	45.8	15.4
San Mateo.....	26,585	12,094	119.8	434	61.3	33.4
Santa Clara.....	83,539	60,261	38.7	1,286	64.9	18.1
	925,708	658,156	40.6	7,108	130.2	27.6

SOUTH OF TEHACHAPI

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Los Angeles.....	504,131	170,289	196.0	4,202	119.9	79.4
Santa Barbara.....	27,738	18,934	45.4	2,636	10.5	3.3
Ventura.....	18,347	16,697	27.7	1,721	10.6	2.5
Orange.....	34,436	19,696	74.8	750	45.9	19.7
San Diego.....	61,665			4,207	14.6	4.7
		35,090	114.4			
Imperial.....	13,591			4,316	3.1	
San Bernardino.....	56,706	27,927	103.0	19,947	2.8	1.4
Riverside.....	34,696	17,897	93.9	7,323	4.7	2.3
	751,310	304,209	146.9	45,102	16.6	9.9

SACRAMENTO VALLEY

	Population		Increase Per cent	Square miles	Population per square miles	
	1910	1900			1910	10 yr. inc.
Sacramento.....	67,806	45,912	47.6	1,000	67.8	21.9
Yolo.....	15,926	13,618	16.9	996	16.0	2.3
Sutter.....	6,328	5,886	7.5	622	10.1	.7
Colusa.....	7,732	7,364	4.7	1,088	7.1	.4
Glenn.....	7,172	5,150	39.2	1,270	5.6	1.5
Tehama.....	11,401	10,996	3.7	3,008	3.7	.1
Butte.....	27,301	17,117	59.4	1,660	16.4	6.1
Yuba.....	10,042	8,620	16.5	636	15.8	2.4
	153,708	114,656	34.6	10,280	14.9	3.8

SAN JOAQUIN VALLEY

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
San Joaquin.....	50,731	35,462	43.1	1,396	36.4	10.3
Stanislaus.....	22,522	9,550	136.7	1,456	15.5	9.0
Merced.....	15,148	9,215	64.4	1,932	7.8	3.0
Madera.....	8,368	6,364	31.4	2,062	4.1	1.0
Fresno.....	75,657	37,862	99.8	6,152	12.3	6.5
Kings.....	16,230	9,871	64.4	1,176	13.7	5.3
Kern.....	37,715	16,480	128.8	8,050	4.7	2.7
Tulare.....	35,440	18,375	93.4	4,925	7.2	4.4
	261,811	143,179	80.2	27,176	9.7	4.4

SUMMARY OF THE STATE

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SUMMARY OF THE STATE

	Population		Increase	Square miles	Population per square mile	
	1910	1900	Per cent		1910	10 yr. inc.
Bay counties.....	925,708	658,156	40.6	7,108	130.2	37.6
South of Tehachapi.....	751,310	304,209	146.9	45,102	16.6	9.9
Sacramento valley.....	153,708	114,656	34.6	10,280	14.9	3.8
San Joaquin valley.....	261,811	143,179	80.2	27,176	9.7	4.4
Rest of the state.....	285,012	264,853	7.6	66,506	4.2	.4
	2,377,549	1,485,053	60.1	156,172	15.2	5.7

This segregation shows that the greatest gain per square mile has been in the counties about San Francisco Bay, while the greatest aggregate gain and the greatest rate of increase has been south of the Tehachapi.

Of the two great interior valleys, the San Joaquin Valley has made the greatest aggregate gain, 118,632, and the greatest gain per cent, 80.2; while the Sacramento Valley made an aggregate gain of 39,042, and a gain per cent of 34.6.

The remaining counties of the State, twenty-five in number, show an aggregate gain of 20,159, and a net gain of 7.6 per cent.

Irrigation, the development of agricultural lands, and the development of bountiful oil fields of the State, have been the main factors in attracting home-seekers and investors.

POPULATION OF CITIES OVER 5,000.

	1910.	1900.
Alameda	23,383	16,464
Alhambra	5,021	.....
Bakersfield	12,727	4,836
Berkeley	40,434	13,214
Eureka	11,845	7,327
Fresno	24,892	12,470
Long Beach	17,809	2,252
Los Angeles	319,198	102,479
Marysville	5,430	3,497
Napa	5,791	4,036
Oakland	150,174	66,960
Pasadena	30,291	9,117
Petaluma	5,880	3,871
Pomona	10,207	5,526
Redlands	10,449	4,797
Richmond	6,802	.....
Riverside	15,212	7,973
Sacramento	44,696	29,282
San Bernardino	12,779	6,150
San Diego	39,578	17,700
San Francisco	416,912	342,782
San Jose	28,946	21,500
San Luis Obispo	5,157	3,021
San Rafael	5,934	3,789
Santa Ana	8,429	4,933
Santa Barbara	11,659	6,587
Santa Cruz	11,146	5,659
Santa Monica	7,847	3,057
Santa Rosa	7,817	6,673
Stockton	23,253	17,506
Vallejo	11,340	7,965
Total	1,314,037	739,513

Class of places	Population		Increase 1900 to 1910	
	1910	1900	Number	Per cent
The state.....	2,377,549	1,485,053	892,496	60.1
Urban territory in 1910.....	1,469,739	810,193	659,546	81.4
Cities and towns of—				
100,000 inhabitants or more in 1910.....	886,284	514,008	372,276	72.4
25,000 to 100,000 inhabitants in 1910.....	183,945	90,813	93,132	102.6
2,500 to 25,000 inhabitants in 1910.....	399,510	205,372	194,138	94.5
Remainder of the state.....	907,810	674,860	232,950	34.5

THE GAIN ON THE PACIFIC SLOPE.

While the gain in population for the whole of the Continental United States was 15,977,691, an increase of 21 per cent, the eleven States of the Pacific Slope, as given in the table below, show an aggregate increase of 2,734,567, an increase of 66.8 per cent.

The combined area is 1,175,742 square miles, which makes an average population per square mile of 5.8 per cent, while the average population per square mile for the Continental United States is 30.9 persons.

PACIFIC SLOPE STATES

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Montana.....	376,053	243,329	54.5	145,310	2.6	.9
Wyoming.....	145,965	92,531	56.8	97,575	1.5	.6
Colorado.....	799,024	539,700	48	103,645	7.5	2.3
New Mexico.....	327,396	195,300	67.6	122,460	2.7	1.1
Arizona.....	204,354	122,931	66.2	112,920	1.8	.7
Utah.....	373,351	276,749	34.9	82,190	4.5	1.1
Nevada.....	81,875	42,335	93.4	109,740	.8	.4
Idaho.....	325,594	161,772	101.3	84,290	3.9	2
Washington.....	1,141,990	518,103	120.4	66,880	17	9.3
Oregon.....	672,765	413,536	62.7	94,560	7.1	2.7
California.....	2,377,549	1,485,053	60.1	156,172	15.2	2.7
	6,825,916	4,091,349	66.8	1,175,742	5.8	2.4

Expansion of Agricultural Industries. The development of the agricultural resources of the State is exhibited in the following tables, comparing the acreage sown to certain crops in 1862 with those of 1910.

	1862 Agr. report acres	1910 Census report acres	
Indian corn.....	17,339	51,935	
Wheat.....	361,351	478,637	
Rye.....	1,415	7,027	
Oats.....	36,607	192,158	
Barley.....	223,217	1,195,158	
Hay and forage.....	250,464	2,049,213	
Potatoes.....	3,624	72,799	
Total.....	914,788	4,046,927	
Add acreage of following not mentioned in report 1862:			
Hops.....		8,391	
Celery.....		5,600	
Beans.....		157,825	
Standing alfalfa.....		487,134	
Cotton.....		15,000	
Sugar beets.....		101,000	
Kaffir corn, mustard seed, etc.....		50,194	825,144
			4,872,071

Besides this increase in acreage of the staple crops, California had, according to the report of the State Board of Equalization, vines and fruit trees as follows, bearing and not bearing, in 1910:

VINEYARDS

	Acres
Table grapes.....	53,729
Raisin grapes.....	128,217
Wine grapes.....	160,573

ORCHARDS

Deciduous fruits—		No. of trees	Citrus fruits—		No. of trees
Apple.....		2,143,815	Orange.....		10,803,221
Apricot.....		2,593,884	Lemon.....		1,810,616
Cherry.....		601,520	Pomelo.....		18,886
Fig.....		549,875	Lime.....		1,716
Nectarine.....		63,773			
Olive.....		1,190,452	Total.....		12,634,439
Peach.....		10,922,994			
Pear.....		1,499,932	Nuts—		
Plum.....		1,059,453	Almond.....		1,204,382
Prune.....		8,998,831	Walnut.....		891,147
Total.....		19,624,529	Total.....		2,095,529
Grand total in 1909-10.....					34,354,497

The new plantings since that will easily bring the total deciduous and citrus fruits and nuts up to 36,500,000.

FINANCIAL CONDITIONS IN CALIFORNIA.

The following exhibit by E. F. Adams, Esq., of financial conditions in the State at the close of the last fiscal year, June 7, 1911, shows California finances to be in a very healthy condition:

ALL STATE AND NATIONAL BANKS IN CALIFORNIA, INCLUDING SAVINGS BANKS AND TRUST COMPANIES.

Condition June 7, 1911.

	502 state banks	203 nat'l banks	Total 705 banks	Increase in 11 months and 7 days
Resources.....	\$608,858,170	\$433,582,491	\$1,042,440,661	\$72,504,646
*Loans and discounts.....	379,064,484	226,301,290	606,365,774	42,965,344
Capital, surplus and undivided profits.....	94,728,291	89,057,039	185,775,330	10,610,669
Individual deposits.....	481,195,256	216,747,109	697,942,365	35,062,639

*Includes overdrafts.

Savings Banks

	California	San Francisco	Los Angeles
*Capital.....	\$ 41,651,517	\$ 17,207,819	\$ 7,112,369
Individual deposits.....	358,251,642	164,938,582	68,384,091
Loans.....	265,405,898	107,709,440	54,419,979
Resources.....	407,676,080	182,873,964	76,211,215

*Includes surplus and undivided profits.

The showing made by the savings banks betokens thrift.

Clearing House Exhibits.

Clearing house statistics for the year ending Dec. 31, 1911, are of much significance when compared with previous years and show that business has gained in volume, and evidences a healthy increase over the last previous year, not only in San Francisco, but elsewhere in the State.

Bank Clearings.

The bank clearings of San Francisco have more than doubled since 1900. Los Angeles, the other large financial center of the State, while showing a smaller aggregate has a larger proportionate increase.

The record of advancement in the past eleven years is as follows:

San Francisco.		Los Angeles.	
Year.	Clearings.	Year.	Clearings.
1900	\$1,029,582,594.78	1900	\$122,692,555.55
1901	1,178,169,536.30	1901	161,466,671.54
1902	1,373,362,025.31	1902	245,516,094.85
1903	1,520,200,682.07	1903	307,316,530.90
1904	1,534,631,136.73	1904	345,343,956.35
1905	1,834,549,788.51	1905	478,985,298.40
1906	1,998,400,779.06	1906	578,635,516.82
1907	2,133,882,625.80	1907	581,803,982.00
1908	1,757,151,850.08	1908	505,588,756.02
1909	1,979,872,570.06	1909	673,165,728.81
1910	2,323,772,870.99	1910	811,377,487.47
1911	2,427,075,543.46	1911	942,914,424.19

While the total clearings of the United States for 1911 showed a decrease as compared with 1910 of 2½ per cent, San Francisco had an increase of nearly 4½ per cent.

Returns for the first quarter of 1912, move San Francisco up from seventh to sixth place in the list of clearing house cities.

Other Clearing House Cities.

	1909.	1910.	1911.
Oakland	96,527,088.09	157,460,588.22	172,666,406.17
Sacramento	54,512,723.22	69,447,281.94	78,376,700.21
San Diego	52,094,521.00	66,708,874.00	82,724,333.47
Fresno	29,324,258.30	37,930,473.07	39,782,776.05
Stockton	28,195,022.20	32,277,582.58	40,356,582.58
San Jose	25,320,894.50	27,828,978.64	29,877,754.37
Pasadena	(With Los. Ang.)	40,570,318.90	41,607,900.10

PROGRESS IN THE METROPOLIS.

The sixth anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.

San Francisco has won the admiration and wonder of the world by the courage and energy of her rebuilding, and stands today more fit than ever to occupy her proper place among the great cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represented sixty-one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of her people has been justified and the promise of greater prosperity for the future is hers.

To this prosperity the whole State contributes and in it shares.

San Francisco can now claim to be, in character and equipment of her new structures, the most up-to-date city in the world. She is now authorized by the Federal Government to invite the nations of the world to come and see for themselves when she opens the **Panama-Pacific International Exposition in 1915**, which enterprise was inaugurated in the presence of a vast multitude in Golden Gate Park, October 14, 1911, by the turning of the first shovelful of earth by Wm. H. Taft, President of the United States.

RECONSTRUCTION OF SAN FRANCISCO.

The reconstruction of the city involved vast expenditures by the municipality for streets, sewers, fire system, school houses and other municipal buildings, all of which has been of the most substantial character.

Private Construction.

The private construction as shown by the official permits issued, gives the record as follows:

		April, 1906, to Dec. 31, 1910	1911
	Number Buildings	Cost	Cost
Class A.....	117	\$ 24,927,260	\$ 1,809,097
Class B.....	135	9,256,871	1,010,500
Class C.....	1,830	55,835,617	8,145,673
Frames.....	16,951	67,965,376	8,345,956
Alterations.....	11,280	18,897,080	1,604,248
Total.....	30,316	\$176,882,204	\$20,915,474
For 1911.....	6,079	20,915,474	
Grand total.....	36,395	\$197,797,678	
Add 15 per cent for under valuation.....		29,669,650	
		\$227,467,328	

The buildings destroyed numbered 28,188, valued at \$105,000,000. The money expended by private parties for labor on the new buildings amounted to some \$70,000,000, while the municipality expended large sums on the same account.

Though San Francisco has always been famous for its hotels, it has added largely to the number and size and now has some of the finest and best equipped hostelryes in the country, and can demonstrate its ability to comfortably house any number of visitors that may be drawn within her gates at any one time.

The hotels proper number over 320 with nearly 30,000 rooms, and accommodations for 60,000 guests at one time. There are also over 300 apartment houses and over 500 lodging houses, in which a large share of the floating population find shelter.

New hotels, apartment houses and lodging houses are under construction, and the number will be greatly augmented. By the time of the opening of the Panama-Pacific International Exposition, San Francisco will be in a position to sustain her prestige for care of her visitors in the face of multitudes that will be drawn to the city on that notable occasion.

The growth of building activities all over the State has been greatly stimulated by the publicity given to California by San Francisco's mishap and her reconstruction, as the following exhibit for Los Angeles, Oakland, and other leading cities of the State shows:

The eyes of the world were drawn to California.

	Valuation.		Valuation.
Los Angeles...	{ 1905 \$15,382,057 1909 13,260,703 1910 21,684,100 1911 23,004,185	Sacramento.....	{ 1906 \$ 994,811 1909 2,063,394 1910 2,164,456 1911 3,087,392
Oakland.....	{ 1906 4,445,692 1909 5,318,512 1910 6,695,789 1911 6,202,685	Pasadena.....	{ 1905 1,953,532 1909 1,888,826 1910 2,133,528 1911 2,183,713
San Diego.....	{ 1905 1,193,170 1909 2,632,100 1910 4,005,200 1911 5,703,685	San Jose.....	{ 1905 908,525 1909 1,195,280 1910 1,750,000 1911 569,369
Stockton.....	{ 1906 488,372 1909 565,195 1910 506,494 1911 938,857	Fresno.....	{ 1907 129,880 1909 332,897 1910 990,040 1911 1,075,941

RECONSTRUCTION OF SAN FRANCISCO

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FEDERAL BUSINESS IN SAN FRANCISCO.

For 1911.

Postal Receipts.....	\$ 2,750,215.84	Internal Revenue Receipts..	7,143,523.00
Imports	56,081,967.00	Exports	44,249,472.00
Custom Receipts	6,876,368.67	Tonnage Movement for fiscal	
		year ending June, 1911....	6,135,276 tons.

Of the imports \$40,783,758 were free of duty.

The Commerce of the port reached nearly every country in the world.

COMMERCIAL MOVEMENTS BY SEA AT OTHER PORTS IN CALIFORNIA.

	Imports.	Exports.
Humboldt Bay.....	\$ 7,241	\$1,130,526
Los Angeles	3,765,402	87,605
San Diego	815,353	1,218,792

Harbor Improvements Planned for San Francisco Bay. The improvements to San Francisco harbor made possible by the \$2,000,000 State bond issue of 1904 have been augmented by the State bonds to the amount of \$9,000,000 authorized in 1910. At the same time \$1,000,000 bonds were voted for the acquisition of Islais Creek lands for an inland basin.

Within the next four years, by the time of the opening of the Panama-Pacific International Exposition in 1915, these extensions and improvements will be completed, giving San Francisco a wharfage line of 44.5 miles not including Channel Creek and the three basins. A belt road connecting the piers with the transcontinental railway lines is furnishing ideal facilities for handling the commerce of the port and the present plans provide for its expansion.

San Francisco deservedly ranks as one of the Great Cities of the World. She is a Great City by reason of her position and power in the social, commercial and financial world. San Francisco is pre-eminently a commercial city. It is a foreign and domestic market without a peer on the Pacific Coast. The city has all the advantages of location possessed by any of the great commercial centers of the world. It is situated on the north end of a peninsula, six miles wide and twenty miles long, separating San Francisco Bay from the Pacific Ocean.

As a seaport it receives the commercial drainage of a region that has the greatest variety of natural resources of any part of the earth. That drainage is the great inextinguishable, economic fact that rebuilt San Francisco after the catastrophe of 1906 on greater lines than before. It was economic pressure that forced and inspired the energies which have made a new city that is the wonder of the World.

Oakland Harbor. The great seaport of Pacific America, with constantly expanding commerce demands ever-widening facilities for handling it. Fortunately this demand is being met by San Francisco and Oakland, the two great cities of the bay region. Formerly there was danger that much of our commerce would be alienated by the lack of adequate port and dock facilities. This risk is no longer imminent. The San Francisco Harbor Commissioners, watchful of the needs of trade, are wisely expanding its facilities on the water front within their jurisdiction. But when they have done all within their power, the expansion of commerce will not stop, and to meet it Oakland is wisely and watchfully moving to develop her splendid water front to secure deep water to accommodate the largest ships and to meet commerce by water and rail facilities that will give trade a line of least resistance.

The Oakland water front is a great asset of the Pacific trade, and its improvement now planned and in progress means that the commerce of all times is to have on San Francisco Bay every advantage that natural situation justifies and that enlightened public enterprise can supply.

For that improvement Oakland has voted a bond issue of \$3,500,000, and the grantees of that city are beginning the expenditure of \$20,000,000 additional on the western and southern water front. When these improvements are completed Oakland will offer facilities which may well rank with those of Hamburg, Havre, The Hague and Liverpool.

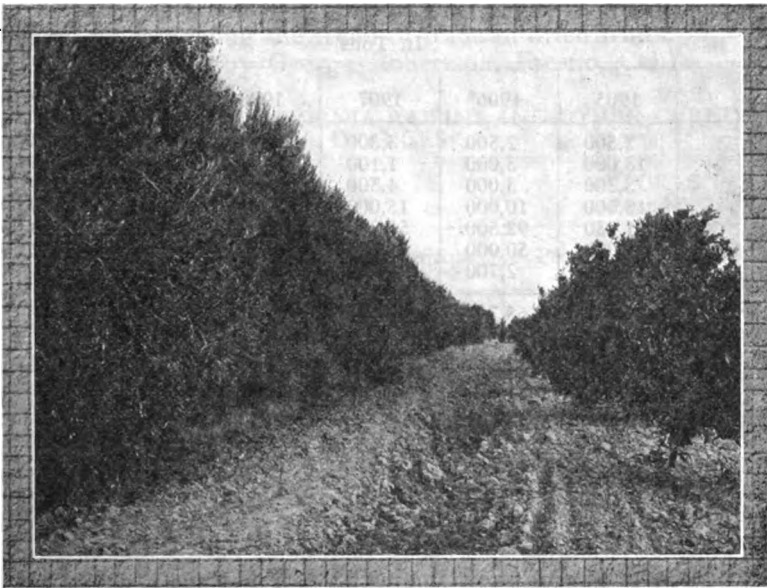


Map of San Francisco Bay and Vicinity.

Hereafter, then, there need be no fear that any ship, however great her tonnage or deep her draught, will fail of accommodation in this bay, or that any cargo, in or out, will lack the latest and most economical device for handling and transfer. The same spirit is upon both cities, not in rivalry, but with the determination that this seaport, intended by nature to be one of the world's greatest, shall by art and enterprise fulfill its destiny.

CITRUS AND DECIDUOUS FRUITS.

Citrus Fruits. The shipment of citrus fruits from California for the season Nov. 1, 1910, to Oct. 31, 1911, was greater than in any year previous. They totalled 46,394 carloads, of which 36,821 were of oranges and 6,764 of lemons went south of Tehachapi. The balance, 2,809 carloads, went from Central and Northern California. The shipments from this section begin the first week in November and the oranges bring from \$4 to \$5 per box. These shipments were by freight and exclusive of what was marketed within the State and those shipped East by express. The development of the citrus industry in California, which this year amounts to near 30,000,000 boxes, can be seen by reference to the table on the preceding page. It is nearly three times as great as all the other states combined.



Oranges and Olives Thrive Side by Side.

Fresh Fruit. The fruit distributing associations and others furnish statistics of shipments of deciduous fruits to Eastern markets for the year 1911, as given in the table herewith.

As the varieties are shown, they add to the value of the tables of shipments. The figures are for actual carloads without regard to tons in a car. The minimum fixed by the railway companies now is 13 tons, but a carload is often 30 tons. Other tables in the report retain the original 10-ton unit. As an illustration, the table on a preceding page shows 16,122 carloads of fresh fruit for 1908, while the Fruit Association's table gives the number at 12,917 cars. An apparent discrepancy occurs in using actual carloads in one instance and the 10-ton unit in the other.

SHIPMENTS FROM NORTH OF TEHACHAPI

Varieties	1905	1906	1907	1908	1909	1910	1911
Cherries.....	79	150	98	208 $\frac{1}{4}$	250	250	216 $\frac{1}{2}$
Apricots.....	279	16	71	231 $\frac{3}{4}$	210	290	214 $\frac{1}{2}$
Peaches.....	1946	584	699	1980 $\frac{1}{4}$	2599	2518	2027
Plums and prunes.....	1391	1220	1039	1763	1526	1552	1391
Pears.....	1013	1513	1039	2701 $\frac{1}{2}$	2638	2361	2324
Grapes.....	1602	2052	3460	3816 $\frac{1}{4}$	5880	4948	6374 $\frac{1}{2}$
Apples.....	1761	770	1085	2216	2188	2153	.....
*Miscellaneous.....	.....	.....	.....	.....	19	.....	16 $\frac{1}{4}$
Total.....	8071	6305	7491	12917	15280	14072	12539

*Includes Quinces, Persimmons and Figs previous to 1909 not counted separately.

While the above table includes no apple shipments for 1911, Watsonville reports 3,174 carloads from the Pajaro Valley and Sonoma reports 650 carloads from that county. The total shipments by rail from the State are seen on a preceding page.

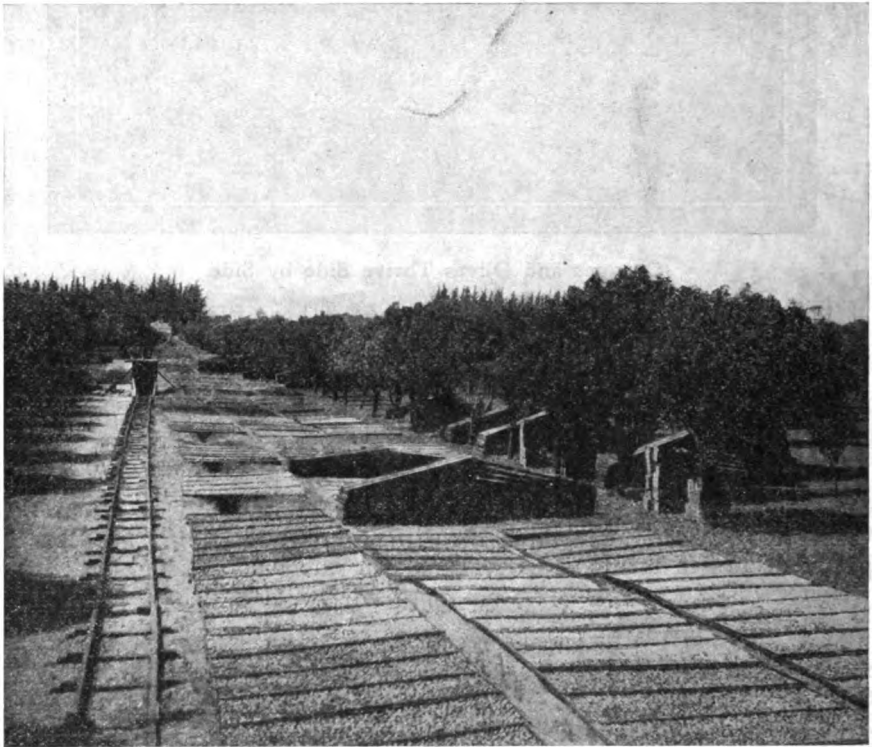
Dried Fruits. Nearly all kinds of deciduous fruits are dried for the market, but prunes, peaches and apricots are the most important. The dried output of all, except figs, varies largely according to the season; the demand of the Eastern market for fresh fruit, and the prices offered by the canners.

CALIFORNIA DEVELOPMENT BOARD

OUTPUT OF CURED FRUITS, INCLUDING PRUNES AND RAISINS, 1905-1911

In Tons

	1905	1906	1907	1908	1909	1910	1911
Apples.....	2,500	2,500	3,300	3,350	3,000	3,000	3,500
Apricots.....	18,000	3,000	1,100	19,000	14,000	15,250	8,800
Figs.....	3,200	3,000	4,500	2,900	4,000	3,775	5,250
Peaches.....	18,000	10,000	15,000	23,000	20,000	25,000	13,000
Prunes.....	31,250	92,500	53,000	28,500	75,000	40,000	88,000
Raisins.....	45,000	50,000	75,000	65,000	70,000	62,500	67,500
Various other.....	2,750	2,700	1,200	3,000	2,500	1,750	1,750
Total tons.....	120,700	163,700	153,100	144,750	188,500	151,275	187,800



Pear Orchard and Fruit Drying Yard.

Long stretch of sunny days is an important factor in curing fruit.

Prunes. Of dried fruits, prunes come next in importance to raisins. Prunes are grown in many counties throughout the State; the largest center of this industry is the Santa Clara Valley. A good many prunes are grown in the San Joaquin and Sacramento Valleys and also in Contra Costa and Sonoma Counties.

The output varies largely in different years.

CALIFORNIA PRUNE OUTPUT

Year	Tons	Year	Tons
1898.....	45,210	1905.....	31,250
1899.....	56,863	1906.....	92,500
1900.....	87,000	1907.....	53,000
1901.....	40,800	1908.....	28,500
1902.....	98,500	1909.....	77,500
1903.....	82,500	1910.....	45,000
1904.....	67,500	1911.....	88,000

Exports and Imports The following exhibit is of some interest in this connection as of Dried Fruits. showing the trend of trade in dried fruits.
(Compiled by George Robertson, Fresno, Cal.)

EXPORTS AND IMPORTS OF CALIFORNIA RAISINS AND OTHER CURED FRUITS AND ORANGES

RAISINS (Pounds)			EXPORTS (Pounds)			
Year	Export	Import	Apricots	Peaches	Prunes	Oranges (Boxes)
1905.....	3,978,645	11,511,347	13,616,010	700,902	34,820,748	.....
1906.....	9,749,690	4,537,648	3,268,457	1,819,863	31,777,704	.....
1907.....	4,720,606	9,927,771	1,540,471	1,354,317	37,674,800	.....
1908.....	7,084,178	4,875,693	14,463,948	1,296,095	18,087,319	714,365
1909.....	8,363,845	5,219,649	13,644,135	2,843,968	83,128.101	952,869
1910.....	15,547,074	3,022,918	18,366,055	4,946,406	64,470,370	962,229
1911.....	20,052,711	3,554,794	12,194,491	6,406,822	67,679,170	1,265,000

California's export of cured fruits, especially prunes and raisins, is steadily increasing, while the importations are falling off. The quantity of fruit exported depends to a certain extent on the size of the crop.

California cured fruits are sent all over the world but her best customers in 1911 were:

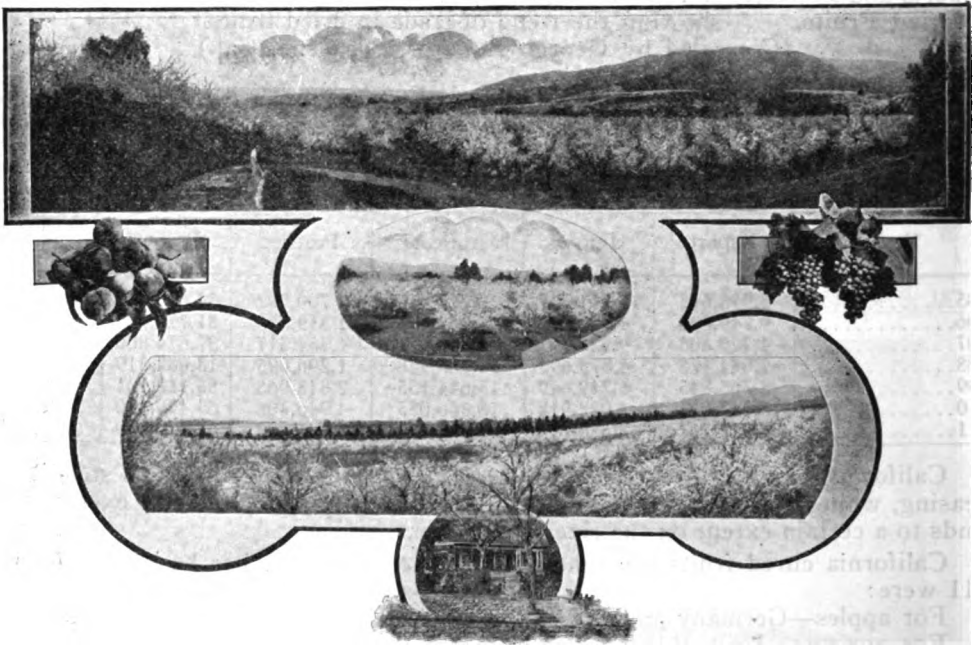
- For apples—Germany and the Netherlands.
- For apricots—United Kingdom, France and Germany.
- For peaches—Canada and Germany.
- For prunes—Canada, United Kingdom and Germany.
- For raisins—Canada and New Zealand.

Canned Fruit. The canning of fruit and vegetables is an important industry in California, and the yearly output of canned goods is very large.

The aggregate number of cases of all kinds of fruit and berries canned in 1911 was larger than for any previous year except 1908. The demand for fresh fruit at home and for shipping takes a large quantity of fruit that would otherwise go to the canner.

The following exhibit from the "California Fruit Grower" and "Western Packer and Canner" is made of the various kinds of fruit canned in 1910 and 1911:

Fruits	1910—Cases		1911—Cases		Production During Last Ten Years	
	Nos. 2½, 3 etc all grades	No. 8 (gals.) All grades	Nos. 2½, 3, etc All grades	No. 8 (gals.) All grades	Year	Cases
Apples.....	6,280	70,550	8,750	56,550	1901	2,677,082
Apricots.....	554,530	198,630	708,500	149,825	1902	2,252,790
Blackberries.....	26,425	35,600	35,250	42,575	1903	2,783,504
Cherries, Royal Ann...	123,240	13,050	99,700	11,740	1904	2,840,614
Cherries, black.....	18,110	1,510	26,860	2,005	1905	3,283,296
Cherries, white.....	33,410	5,875	49,730	8,770	1906	3,109,225
Grapes.....	39,285	6,360	62,115	8,800	1907	2,982,985
Loganberries.....	6,977	5,662	12,106	7,011	1908	4,734,663
Nectarines.....	.....	1	5	18	1909	3,047,001
Pears.....	568,125	51,230	579,960	38,960	1910	4,008,549
Peaches, free.....	553,000	195,825	582,200	156,200	1911	4,182,650
Peaches, cling.....	1,233,200	163,425	1,210,525	142,200		
Plums.....	65,550	14,810	143,350	22,490		
Raspberries.....	9,335	791	2,950	675		
Strawberries.....	13,225	848	6,505	1,210		
Other fruits.....	2,250	1,400	1,390	3,725		
Total fruit (cases).....	3,242,942	765,607	3,529,896	652,754		
Grand total fruits.....	.....	4,008,549	.....	4,182,650		



Fruit Orchard in Bloom in Santa Clara Valley.

The Vineyard. California is the most important factor in viticulture in the United States. It has over 90,000,000 vines, more than all the other States. It represents an investment of \$150,000,000 which returns an annual income of over \$25,000,000. Over 60,000 people are dependent upon California's viticultural industry. This includes our 10,000 grape growers, 600 wine makers, and the laborers who do the picking and hauling, those employed in the wineries and those engaged in handling the wine for distribution.

According to the 1910 report of the State Board of Equalization, nearly 350,000 acres are devoted to grape growing. Of this, 275,000 acres are in full bearing. 36,000 acres are devoted to table grapes; 109,000 to raisin grapes and 130,000 to wine grapes.

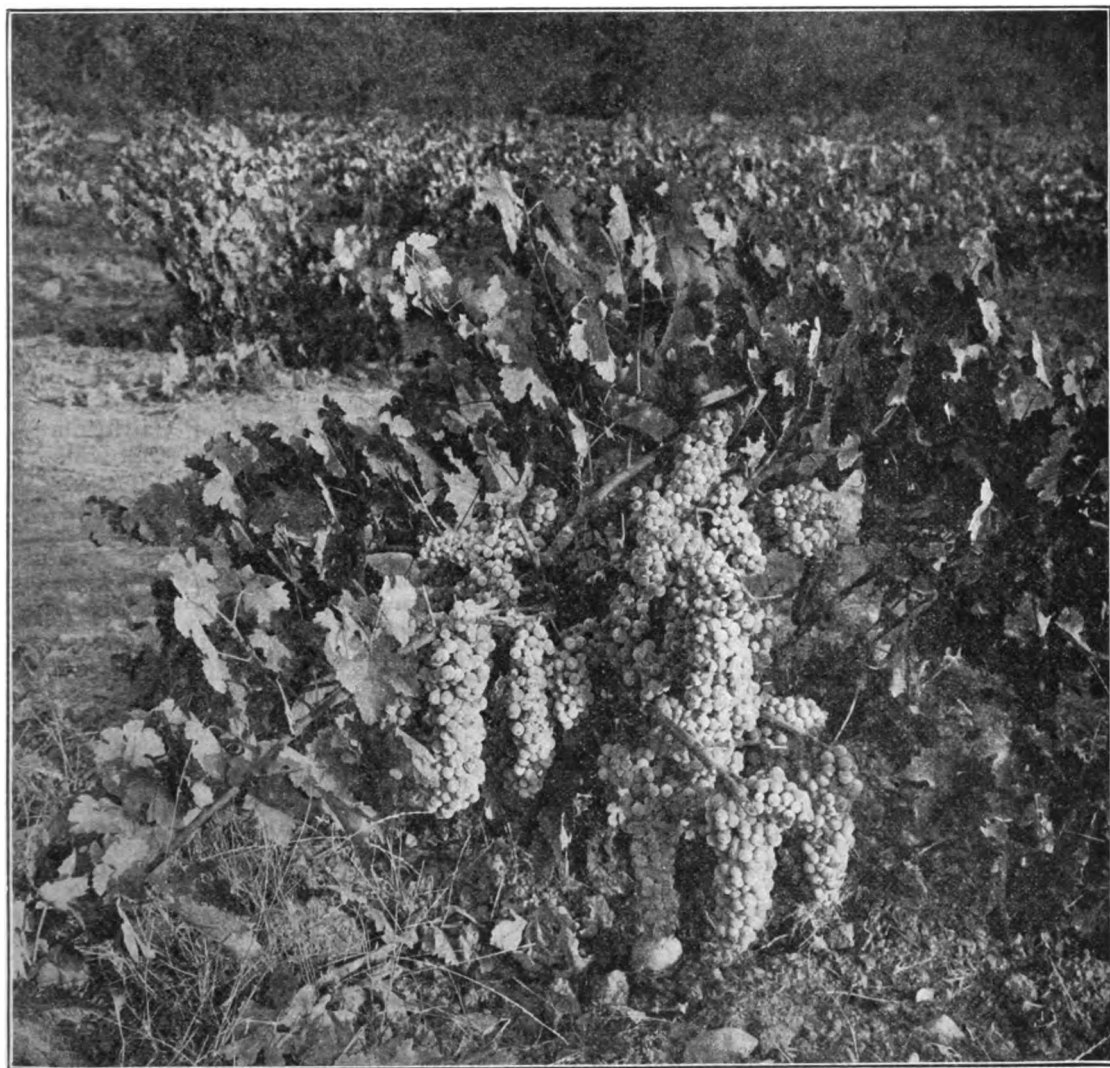
The shipments of table grapes out of the State by rail for 1911 amounted to 6,375 carloads.

Raisins. The center of the raisin industry is in Fresno County, although raisins are produced in other parts of the State. The crop varies from year to year, as the appended table shows; that for 1910 exceeds the average of the six preceding years:

CALIFORNIA RAISIN CROP.

Year.	Tons.	Year.	Tons.
1897	46,852	1904	37,500
1898	40,365	1905	43,750
1899	35,784	1906	47,500
1900	47,167	1907	60,000
1901	37,125	1908	60,000
1902	54,375	1909	70,000
1903	60,000	1910	56,000
		1911	67,500

The above figures show that Fresno County now produces about 60 per cent of the California raisin crop, and nearly twice the quantity produced by Spain, which produces from 15,000 to 30,000 tons and has held the lead for centuries. It was in 1892 that the California raisin crop first equaled that of Spain, and it has been increasing the difference ever since.



Five-year-old Berger Grapes at Asti from which Choice White Wines are Made.

Seeded Raisins.

Fresno County is the center of the seeded raisin industry, where it originated. The following figures show the wonderful increase in this popular form of raisins during the last fourteen years:

	Tons.		Tons.
1896	700	1904	18,000
1897	3,500	1905	21,000
1898	7,000	1906	24,000
1899	12,000	1907	26,000
1900	14,000	1908	24,000
1901	14,000	1909	28,000
1902	16,000	1910	31,500
1903	18,000	1911	33,000

(The above are only approximate figures.)

CALIFORNIA DEVELOPMENT BOARD

COUNTIES WHERE CALIFORNIA RAISINS ARE PRODUCED.

County.	Crop of 1909—pounds.
Fresno	84,000,000
Tulare	20,000,000
Kings	18,000,000
Sutter	4,000,000
San Bernardino	3,600,000
San Diego	3,200,000
Madera	2,400,000
Yolo	2,000,000
Kern	1,100,000
Colusa	800,000
Los Angeles	300,000
Total crop.....	140,000,000

WINE AND BRANDY.

Wine and Brandy. During the past ten years the manufacture of California wines has more than doubled, as shown by the following table. The yield for 1911 was about 49,280,000 gallons. The production of sweet wines was the greatest in the history of the industry, viz: 23,280,044.48 gallons, while the dry wine output totalled about 26,000,000 gallons.

WINE AND BRANDY PRODUCTION 1897-1911.

Year	Dry wines Gals.	Sweet wines Gals.	Brandy Gals.
1897.....	28,736,400	5,197,500	1,442,468
1898.....	10,750,000	7,779,000	1,250,000
1899.....	15,103,000	8,330,000	1,699,035
1900.....	16,737,260	6,940,300	3,256,513
1901.....	16,473,731	6,270,300	1,688,482
1902.....	28,224,146	14,835,146	4,564,173
1903.....	21,900,500	12,670,356	1,972,000
1904.....	15,589,342	13,571,856	4,420,839
1905.....	20,000,000	10,700,000	1,250,000
1906.....	26,000,000	15,000,000	1,345,000
1907.....	27,500,500	15,500,000	1,500,000
1908.....	22,500,000	14,750,000	1,750,000
1909.....	27,000,000	18,000,000	2,000,000
1910.....	27,500,000	18,000,000	2,500,000
1911.....	26,000,000	23,280,044	2,000,000

California wines have a wide and growing market. The railroad shipments, on another page, go mainly to Eastern points, while those by sea go to the four quarters of the world.

In this connection, the rail shipments and the following is of interest:

EXPORT OF WINE BY SEA

Year	Gallons	Value	Number of Countries Receiving
1908.....	4,250,799	\$1,657,089	12
1909.....	7,440,294	2,386,111	23
1910.....	9,866,539	3,162,600	26
1911.....	15,125,375	4,910,138	32

The commercial brandy production of California during 1911 passed the 2,000,000 mark, while the brandy manufactured for the fortification of sweet wines was 6,100,521.31 gallons.

The shipments of wine out of California by rail during 1911 were about 16,000,000 gallons, while the exports by sea amounted to 11,535 cases and 15,125,375 gallons valued at \$4,910,138. To this must be added the brandy exported, which was 633 cases and 49,343 gallons, valued at \$61,354. Thirty-two countries, besides the United States received this wine.

The output of champagne naturally fermented in bottles in 1911 was 590,000 bottles or about 49,000 cases. This new industry will be greatly extended the coming season.

Three manufactories are at present engaged in making this champagne and 400,000 bottles will be put up in May for the Exposition visitors in 1915.

FRESH AND CANNED VEGETABLES.

Besides supplying the home markets abundantly the shipments of fresh vegetables to the Eastern markets in 1911, amounted to some 130,750 tons, and are increasing year by year.

The principal kinds and the districts from which they go are as follows:

Asparagus.....Delta Region, Los Angeles, Alameda.
 Cabbage.....Los Angeles, San Francisco, San Jose.
 Cauliflower....Los Angeles, San Francisco and Alameda.
 Celery.....Los Angeles, San Francisco, Stockton.
 Melons.....Los Angeles, Stockton.
 Potatoes.....Los Angeles, San Francisco and Alameda.
 Tomatoes.... Los Angeles, Delta Region, Alameda.
 Onions.....San Jose, San Francisco, Delta Region and other points
 Artichokes.... Los Angeles, San Jose and other points.
 Lettuce.....Los Angeles, San Jose and other points.
 Rhubarb.....Alameda, Sacramento Valley, San Joaquin Valley and Central California

Shipments of melons, etc., from Imperial County and Celery, etc., from Orange County are included in Los Angeles territory.

The "Delta Region" includes all the country of the lower Sacramento and San Joaquin rivers.

By potatoes is meant only the shipments of early potatoes.

Canning of fresh vegetables is carried on at various points where there is an ample supply grown.

Asparagus is mainly canned in the Sacramento district, San Jose and Orange Counties.

Peas mostly in Southern California.

Tomatoes in Southern California, Santa Clara Valley and Sacramento Valley.

From the "California Fruit Grower" and "Western Packer and Canner," the following exhibit shows the kinds of vegetables canned in 1909, 1910 and 1911:

Vegetables	Cases—1909		Cases—1910		Cases—1911	
	Nos. 2½ and 3, etc. All grades	No. 8 (gallons) All grades	Nos. 2½ and 3, etc. All grades	No. 8 (gallons) All grades	Nos. 2½ and 3, etc. All grades	No. 8 (gallons) All grades
Asparagus.....	410,335	630	614,050	3,225	684,960	2,105
Beans.....	10,490	1,495	41,610	4,640	53,110	12,710
Peas.....	88,360	15,650	140,855	26,920	162,570	22,205
Tomatoes.....	567,300	104,960	1,159,875	190,435	1,306,190	209,260
Other vegetables.....	38,350	4,700	49,075	19,960	39,575	23,970
Total vegetables (cases)...	1,114,835	127,885	2,005,465	245,180	2,246,405	270,250
Grand total vegetables.....	1,242,720	.....	2,250,645	.....	2,516,655	.....

FRESH FRUITS AND VEGETABLES.

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

OLIVES AND NUTS.

Olives, Olive Oil, Etc. Olive culture is one of the oldest fruit industries in the State. The first orchard was planted in San Diego in 1769, and that county is a large producer of olives and olive oil. There are large orchards in other counties, and every year adds to the number of trees. There are thirty-eight counties reporting over 1,000 trees each, ranging from Shasta on the north to the Mexican line on the south. The number of trees, as reported by the State Board of Equalization, is about 1,200,000 in bearing. Los Angeles leads with 320,800 bearing trees.

Statistics of this industry are difficult to obtain. It has not heretofore been very attractive from a remunerative point of view, but the removal of competition with adulterated oil by the Pure Food regulations has given quite an impetus to planting new trees. Estimates of the production for 1911 range from 750,000 to 900,000 gallons of olive oil, and from 1,000,000 to 1,200,000 gallons of pickled olives.

Honey While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the San Joaquin Valley and the counties south. The crop for 1909 was the record crop and nearly thousands of stands of bees are sent from other states to winter in California.

201,023 colonies of bees were reported by the census bureau. About 8% of the farmers reported bees.

The estimates of the honey product for several years are:

Year.	Pounds.	Year.	Pounds.
1899	2,822,000	1906	5,250,000
1900	2,208,000	1907	8,700,000
1901	8,112,000	1908	5,250,000
1902	5,125,000	1909	11,532,000
1903	8,400,000	1910	5,500,000
1904	7,000,000	1911	9,500,000
1905	9,500,000		

Silk. The raising of silk worms which attracts some attention, is increasing slowly in California and though not yet on a commercial basis, it is likely to become a good industry. The climate in California is admitted to be adapted to the raising of silk. The season for production extends over a period of six to eight months, while in Europe it lasts only as many weeks.

Nuts. The production of almonds fluctuates greatly and the crop for 1909, though much less than that of 1908, was still above the average. The production of walnuts is more regular, and the crop for the year gave good returns.

ALMONDS AND WALNUTS

Year	Almonds Tons (2,000 lbs.)	Walnuts
1895.....	825	2,310
1896.....	1,605	4,115
1897.....	2,375	3,985
1898.....	450	5,650
1899.....	2,320	5,530
1900.....	2,740	5,430
1901.....	1,560	6,910
1902.....	3,270	8,520
1903.....	3,200	5,500
1904.....	800	7,590
1905.....	2,125	5,750
1906.....	900	6,125
1907.....	750	8,250
1908.....	3,000	8,000
1909.....	1,650	7,500
1910.....	2,750	8,500
1911.....	1,700	12,000

At an average value of \$300 per ton, the aggregate of these crops is \$4,110,000.

The average production of walnuts in California for the past ten years was about 8,200 tons.

The average importations about 13,324 tons. The average production of almonds for ten years in California was 1,972 tons.

The quantity is so small, compared with the importations that prices vary according as the latter are light or heavy.

DAIRY INDUSTRY.

The dairy industry is year by year more extended and important. Comparative statistics of butter production of the State for a series of years beginning with 1896 show the importance of this industry, and yet the supply falls so far short of the demand as to necessitate the bringing in of large quantities of butter from other States.

The season, as covered by the report of the State Dairy Bureau, ends September 30th of each year.

Despite the persistent efforts of that bureau some creameries and large producers in a number of counties failed to make report of their production for the year 1911.



Thoroughbred Holstein Dairy Herd.

Scientific Dairying. Scientific dairying has largely superseded the old methods in California, as the following table, showing the number of pounds of butter produced in the State by the creamery method and the old method for seven years ending October 1, 1902, demonstrates:

Year	Creamery Method	Old method	Totals
1896.....	10,097,323	21,508,117	31,605,440
1897.....	10,866,646	17,811,793	28,678,439
1898.....	10,410,479	13,280,549	23,691,028
1899.....	12,725,814	12,143,270	24,869,084
1900.....	16,486,695	12,296,164	28,782,859
1901.....	19,017,512	10,713,370	29,730,882
1902.....	21,593,021	9,935,741	31,528,763

Since 1902 the growth is indicated in the following exhibit:

Year.	Pounds.
1903.....	34,676,311
1904.....	35,636,909
1905.....	41,961,047
1906.....	44,044,578
1907.....	44,599,211
1908.....	48,469,585
1909.....	49,595,869
1910.....	45,819,741
1911 (Reported by State Dairy Breau.....)	50,380,496

The apparent falling off in butter and cheese productions in 1910 was due to refusal or negligence on part of the producers to make report to the State Dairy Bureau.

California is now well to the front as a dairy State. The production of butter for 1911 is the largest in the history of the industry. The increase is mostly in counties where irrigation is practiced.

IRRIGATION AND DAIRYING.

As showing the effect of irrigation on the dairy interests the following exhibit from the reports of the State Dairy Bureau, giving the product of butter in pounds by principal counties, in which irrigation is practiced, is instructive:

Counties	1906	1907	1908	1909	1910	1911
Fresno.....	2,446,897	2,786,817	3,315,926	3,721,262	3,290,825	3,803,644
Kern.....	334,070	372,569	521,495	545,900	565,900	693,413
Kings.....	1,677,272	1,960,364	2,419,651	3,432,879	3,218,036	3,552,542
Merced.....	2,361,528	2,469,726	2,831,846	1,396,865	2,510,269	3,102,222
Sacramento.....	1,617,633	1,060,098	1,277,771	1,592,138	1,102,012	1,405,054
San Joaquin.....	1,641,374	1,625,538	1,605,152	2,350,000	1,425,543	941,430
Stanislaus.....	2,759,582	3,615,469	4,113,866	4,155,701	*4,363,296	5,166,515
Tulare.....	2,075,729	2,522,707	2,729,377	2,307,238	3,072,198	3,955,583
Yolo.....	1,387,210	726,532	944,268	807,787	1,103,114	1,096,718
Totals.....	16,499,295	17,139,820	19,759,352	20,309,770	20,651,193	23,717,121
Humboldt (non-irrig.)...	4,235,927	4,390,815	4,495,041	4,715,998	4,790,280	5,238,382
Imperial.....			1,165,763	1,677,640	1,948,710	2,885,941

Imperial is entirely dependent on irrigation and its butter production, since its formation, has grown rapidly, as the following shows:

1908	1,165,763 pounds.	1910	1,948,710 pounds.
1909	1,677,640 pounds.	1911	2,885,941 pounds.

Evaporated milk was produced in the following counties:

Humboldt	3,233,906 pounds.	Marin	336,000 pounds
San Benito.....	4,914,404 pounds	Sonoma	336,000 pounds

Humboldt County produced 1,971,300 pounds casein and Del Norte County produced 120,000 pounds.

While irrigation has been a most important factor in the increase of butter production, as shown above, Humboldt County, with its abundant rainfall rendering irrigation unnecessary, claims the position of the banner county of the State in dairy products, as shown by the following:

SHIPMENTS OF DAIRY PRODUCTS FROM HUMBOLDT COUNTY, 1911.

(From records of the Humboldt Chamber of Commerce.)

Article.	Weight, lbs.	Value.
Butter	5,238,382	\$1,472,830
Cheese	32,500	5,900
Condensed Milk and Cream.....	2,128,150	177,300
Dry Milk.....	433,800	114,800
Fresh Cream and Milk and Buttermilk.....	289,650	20,140
Casein	1,953,500	118,430
Totals	10,069,800	\$1,977,400

A comparatively new branch of the dairy industry is the production of commercial casein. It is now produced extensively in the northern counties of the State. It is used as a sizing in making high-grades of paper, also for piano keys billiard balls, and everywhere that ivory can be used.

CHEESE PRODUCTION.

Although the State has nearly doubled in butter production in ten years ending 1910, the cheese production has not kept pace therewith.

Out of the fifty-eight counties in the State, twenty-six produced cheese during the year, as compared with twenty-eight during the previous year. Marin, Monterey, Sutter, Santa Clara and Sonoma, in the order named, are the leading counties, and produce more than one-half of the total output of the State. Comparing the totals for the past fifteen years, we have the following:

Year.	Pounds.	Year.	Pounds.
1897	6,399,625	1904	6,133,898
1898	5,148,372	1905	6,020,672
1899	5,294,938	1906	6,418,480
1900	4,989,960	1907	5,928,942
1901	5,681,366	1908	6,162,514
1902	6,503,441	1909	5,931,194
1903	7,218,639	1910	4,648,348
		1911	4,580,495

Large quantities of butter and cheese continue to come from the East, notwithstanding the superior advantages presented in this State for enlarging this branch of farming and for creamery development.

Following are the monthly receipts of butter and range of prices in San Francisco and receipts for Los Angeles and for the two years ending Sept. 31, 1911.

Month	San Francisco				Los Angeles	
	1909-10	1911	1909-10	1910-11	Pounds	
	Pounds	Pounds	Price	Price	1910	1911
October	834,700	722,600	34.75	34.53	620,716	682,049
November	691,300	855,900	32.	35.12	533,589	658,580
December	889,600	811,700	35.71	35.03	492,723	514,334
January	802,300	1,138,600	35.31	32.08	466,964	485,503
February	916,100	1,039,000	33.6	30.16	484,744	596,368
March	1,548,600	1,731,500	29.88	26.86	704,292	726,247
April	1,704,100	2,325,000	26.47	21.60	776,580	845,436
May	1,667,800	2,693,200	26.6	22.73	743,669	921,868
June	1,705,300	2,391,500	28.2	21.92	768,371	539,658
July	1,096,700	1,954,300	29.3	23.10	786,092	983,568
August	1,002,300	1,801,900	32.	25.75	779,971	875,345
September	1,075,400	1,653,700	31.75	26.82	656,850	545,455
Totals	13,934,200	19,118,900	31.3	28.	7,814,561	8,374,411

ANNUAL VALUE OF DAIRY PRODUCTS.

1910.

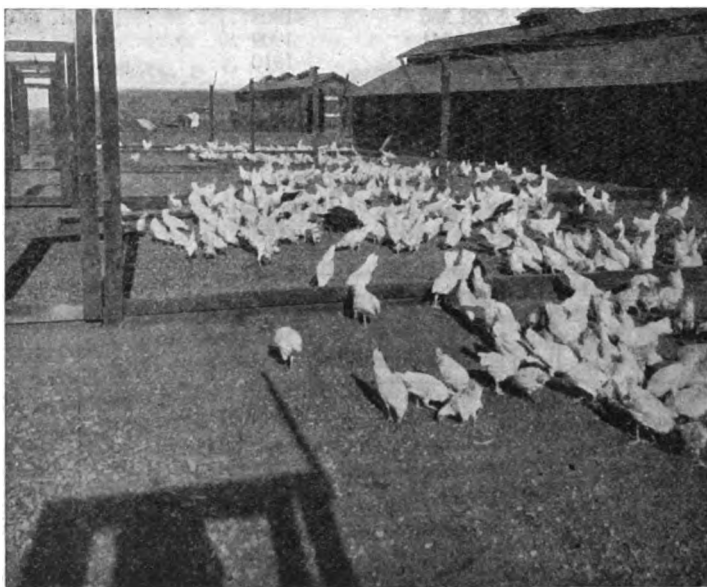
Butter	45,989,140 lbs.	\$14,403,798
Cheese	4,648,348 lbs.	724,212
Condensed Milk and Powdered Milk	8,299,989 lbs.	756,599
Market Milk and Cream Consumed		9,050,000
Calves Produced on Dairies		1,850,000
Skim Milk and Butter Milk		1,400,000
Casein	1,310,000 lbs.	75,000
Total		\$28,259,609

1911.

Butter	50,380,736 lbs.	\$14,106,606
Cheese	4,580,495 lbs.	662,304
Evaporated and Powdered Milk	8,820,310 lbs.	793,828
Market Milk and Cream Consumed		10,000,000
Calves Produced on Dairies		2,000,000
Skim Milk and Butter Milk		1,500,000
Casein	2,091,300 lbs.	125,478
Total		\$29,188,216

POULTRY INDUSTRY.

Poultry raising in California is a profitable industry. In a more or less practical way it has been carried on in all parts of the State, but in Sonoma, Los Angeles, Orange, Santa Clara, Merced, Sacramento, Colusa, Humboldt, and San Benito Counties, and to a less extent in some others, the latest scientific methods are generally practiced with gratifying results. The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally. The largest incubator factory in the world is in Petaluma and turns out about 100,000 chicks per month, and runs to full capacity most of the year.



Poultry Yard.

A thriving industry all over California.

The average chicken ranch near Petaluma consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1.00 per year.

Notwithstanding the remarkable development of the poultry business at Petaluma and other places, the increase is not sufficient to meet the demands of the market. The rapidly expanding population of the State requires the importation in season of some 425 carloads of live and 75 carloads of dressed poultry to San Francisco and Los Angeles, besides several million dozen eggs each year from Eastern points, and there is no immediate prospect of the home supply overtaking the market. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County and enjoys a freight rate by boat to San Francisco of ten cents per case of 36 dozen eggs. The market business done from that point, and its growth, is reflected in the following tables, which show a gain for 1911 over 1910, in egg shipments, of 845,912 dozen, and in poultry of 4,275 dozen.

SHIPMENTS OF EGGS AND POULTRY FROM PETALUMA

Year	Eggs Dozen	Poultry Dozen
1903.....	3,407,333	32,535
1904.....	3,493,321	33,286
1905.....	3,837,061	39,392
1906.....	4,334,321	39,938
1907.....	4,422,968	59,198
1908.....	5,312,804	83,136
1909.....	7,159,481	120,018
1910.....	7,288,215	76,278
1911.....	8,134,129	80,553

The above figures represent actual shipments of eggs to market. It is but fair to say that over one and a quarter million dozen eggs are produced which are used for hatching and home consumption. These added to the above, bring the total production of the Petaluma district up to near ten million dozen, or about 120,000,000 eggs.

POULTRY PRODUCTION.

The daily food requirements for poultry in the Petaluma district for the year aggregate over 550 tons, or 11,000,000 pounds, of which wheat, corn, barley, bran, and middlings form the largest part, viz: about 470 tons.

PRODUCTION OF EGGS

	1910		1911	
	Eggs, Doz.	Poultry, dz	Eggs, dz.	Poultry, dz
Petaluma.....	7,288,215	76,278	8,134,127	80,553
Other points in Sonoma county.....	3,950,160	.....	4,150,000	.....
Total other counties.....	24,529,705	.....	25,450,000	.....
Total for the state.....	35,758,075	.....	37,734,127	.....

FISHING INDUSTRY.

Both the interior and the coastal waters of California abound in food and game fish, offering inducements both to the pleasure-seeker and the profit-earner.

There are about 165 species of cold-water fauna whose proper home is north of Point Conception, and 117 species of semi-tropical fauna found south of Point Conception, beyond the reach of the cold currents of the north.

Of these, one hundred and thirty-three varieties of food fish are found in the San Francisco markets, including oysters and shell fish.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento Basin. Through the work of the Federal and State Commissioners, however, the rivers have been re-stocked and now there are more salmon in the Sacramento River than ever before, but they are mostly marketed as fish.

The State maintains seven hatcheries, at one of which, the Sisson hatchery, more salmon fry are hatched than at any other hatchery in the world. There is also one hatchery and two egg-collecting stations under Federal supervision. Some 30,762,000 fry of various kinds of food and game fishes were deposited in the streams in 1910. Over 30,000,000 pounds of the fish taken for the market are caught in the waters of the bay counties and the Sacramento River.

The Alaska Packers' Association maintains two large hatcheries in Alaska, and in 1911 nearly 70,000,000 salmon fry were liberated in the rivers.

Besides her home fisheries, packing salmon in Alaska waters and Puget Sound employs over fifty San Francisco vessels, many men and a large amount of California capital. The following tables show California's share of the industry, which is very large:

CALIFORNIA DEVELOPMENT BOARD

PACIFIC COAST FISHING INDUSTRY

Extent of Industry		California
Capital employed		\$10,000,000
Number persons employed		9,000
Earnings of labor employed.....		2,250,000
Value of output		7,000,000

The California pack of mild cured salmon for 1911 was 3,160 tierces, 800 pounds each.

2,171 bbls., 200 pounds each, were salted down by San Francisco vessels.

The San Francisco codfish fleet, consisting of 13 vessels, representing an investment of \$475,000, in 1911 took 1,819,000 fish, valued at \$309,230.

The San Francisco whaling fleet, consisting of 8 vessels, took 58,000 pounds of bone, valued at \$188,500, and 2,300 bbls. of sperm oil, valued at \$38,640.

Canned salmon and other fisheries products are sent by sea from San Francisco to nearly every country in the world. Shipments during 1911 were as follows:

	Cases	Pounds	Value
Canned salmon and other salmon	700,063	18,561,611	\$3,927,053

The Alaska Packers' Association report their pack for 1911 as 1,053,015 cases.

FARM ANIMALS.

The following figures for 1911 from the "Crop Reporter" of the Department of Agriculture, revised by the light of the census, show an increase over 1910 in the number of all farm animals, except mules, an increase in average price of all except sheep and swine, and an increase in total number of 526,000 and an increase in total value of \$28,744,000.

Kinds	1910			1911		
	Number	Average Price	Value	Number	Average Price	Value
Horses.....	425,000	\$117.00	\$ 49,725,000	493,000	\$117.00	\$ 57,681,000
Mules.....	80,000	133.00	10,640,000	72,000	136.00	9,792,000
Milch cows.....	500,000	48.00	24,000,000	505,000	53.00	26,765,000
Other cattle.....	1,100,000	23.50	25,850,000	1,515,000	26.70	40,450,000
Sheep.....	2,200,000	3.90	8,580,000	2,656,000	3.00	9,562,000
Swine.....	500,000	7.20	3,600,000	830,000	8.30	6,889,000
Total.....	4,805,000		\$122,395,000	5,331,000		\$151,139,000

The number of sheep is less than the average of previous years. This is partly ascribed to the extension of the forest reserve and restrictions of grazing areas. About 50,000 head of cattle, 155,000 sheep and 60,000 hogs are slaughtered for market in the State each month, a part of which comes from adjoining states. Enlarged outside markets and increasing home demand augur well for the future of the stock-growing industry, especially of hogs.

The census report gives as of April 15, 1910, the following from 80,304 farms reporting.

Kind	Farms Reporting	Number	Value
Cattle	63,053	2,077,025	\$52,785,068
Horses and colts	76,119	468,886	47,099,196
Mules and mule colts	11,015	69,761	9,016,444
Asses and burros	1,099	2,592	347,315
Swine	31,609	766,551	5,106,803
Sheep and lambs	3,857	2,417,477	8,348,997
Goats and kids	1,714	138,413	320,829

Dairy cows are included in cattle. 61,101 farms reported 467,332 cows and heifers, valued at \$18,597,328.

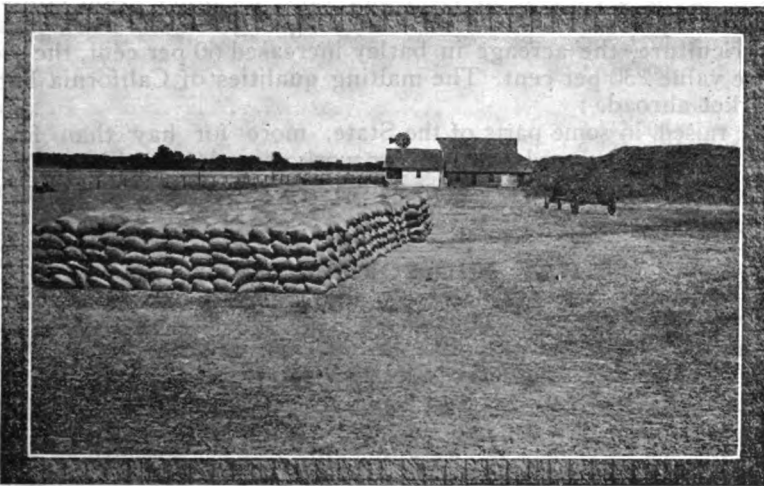
Wool. The wool clip, as estimated by Mr. E. H. Tryon of San Francisco, shows a decline compared with that of 1910. The table shows that it is the smallest since 1867 and only about one-fourth of that of 1876, the record year. The vast ranges that prevailed in the valleys of California at that time are now covered by small farms and orchards.

WOOL PRODUCTION OF CALIFORNIA—1854-1911

Year	Pounds	Year	Pounds	Year	Pounds
1854	175,000	1873	32,155,169	1892	35,802,930
1855	300,000	1874	39,356,781	1893	33,169,375
1856	600,000	1875	43,532,223	1894	36,968,400
1857	1,100,000	1876	56,550,973	1895	35,856,690
1858	1,428,000	1877	53,110,742	1896	27,195,550
1859	2,378,000	1878	40,862,091	1897	34,882,325
1860	3,055,327	1879	46,903,360	1898	28,063,240
1861	3,721,998	1880	46,074,154	1899	28,332,090
1862	5,990,300	1881	45,076,639	1900	27,750,000
1863	6,268,480	1882	40,529,119	1901	26,900,000
1864	7,923,670	1883	40,848,690	1902	21,000,000
1865	8,949,931	1884	37,415,330	1903	22,000,000
1866	8,532,047	1885	36,561,390	1904	22,000,000
1867	10,288,600	1886	38,509,160	1905	22,000,000
1868	14,232,687	1887	31,564,231	1906	24,000,000
1869	15,413,970	1888	32,569,972	1907	15,000,000
1870	20,072,660	1889	34,008,370	1908	15,000,000
1871	22,187,188	1890	34,854,640	1909	16,000,000
1872	24,255,468	1891	33,183,475	1910	15,500,000
				1911	14,000,000

Note.—“Pulled” wool, 4,550,000 pounds, not included in table.

FIELD CROPS.



The Barley Crop is Sacked and Waits in the Field Until Shipment.

Grain. The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1898 and of rye since 1907:

Year	Wheat Bushels 60 lbs.	Barley Bushels 48 lbs.	Corn Bushels 56 lbs.	Oats Bushels 32 lbs.	Rye Bushels 60 lbs.
1898	12,403,700	12,263,461	1,184,040	1,943,304	.....
1899	29,666,666	14,046,087	1,536,975	1,845,787	.....
1900	20,933,333	19,769,760	1,351,975	1,477,771	.....
1901	28,751,500	26,162,780	1,850,793	4,887,374	.....
1902	18,759,490	23,489,065	1,839,150	5,148,583	.....
1903	14,880,990	21,075,000	1,777,162	5,756,964	.....
1904	10,895,216	24,418,604	1,350,000	5,250,000	.....
1905	5,660,360	22,094,186	1,204,000	4,735,000	.....
1906	8,333,330	26,162,790	1,100,000	4,300,000	.....
1907	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908	11,680,000	25,427,000	1,600,000	6,700,000	792,000
1909	11,550,000	31,270,000	1,740,000	6,280,000	842,000
1910	17,100,000	43,400,000	1,838,000	8,325,000	986,000
1911	8,640,000	40,600,000	1,836,000	7,140,000	136,000

In the Crop Reporter Supplement for December, 1911, the figures for the production of these grains for 1910 and 1911 revised by the light of the census, showed a material decrease in production of all except barley from figures previously published. Barley had an increase for 1910 of 3,100,000 bushels and about the same over earlier report for 1911. This increase in production and the very high price of barley more than offset the decrease of the others, and makes the total values for 1911 more than for 1910.

Grain Crops. The yield and values of the cereal crops sown for the harvest of 1911, as given by the Department of Agriculture, are as follows:

REPORT OF CROPS FOR 1911.

	Bushels.	Value.
Wheat	8,640,000	\$ 7,603,000
Barley	40,600,000	34,510,000
Corn	1,836,000	1,652,000
Oats	7,140,000	4,213,000
Rye	136,000	116,000
Total value		\$48,094,000

It appears from department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley, which now equals in acreage and exceeds in yield and value all other grain crops combined.

In the seven years ended in 1906, according to the Year Book of the Department of Agriculture, the acreage in barley increased 60 per cent, the yield 160 per cent, and the value 230 per cent. The malting qualities of California barley give it a ready market abroad.

Oats are raised, in some parts of the State, more for hay than for threshing while corn is but little used as food for work animals. Barley has long been the main grain food in California, but of late years oats have come into use to quite an extent.

HAY AND FORAGE CROP

The hay crop of California is one of her most valuable agricultural products. The census returns for the crop of 1909, a fair year, gave the yield at 4,327,130 tons valued at \$42,187,215. These returns were as follows:

Crop	Farms reporting	Acres harvested	Quantity		Value
			Amount	Unit	
Timothy alone.....	370	13,725	20,001	Tons	\$ 185,579
Timothy and clover mixed.....	958	46,661	73,183	"	629,575
Clover alone.....	703	8,519	20,380	"	213,289
Alfalfa.....	19,904	484,134	1,639,707	"	13,088,530
Millet or Hungarian grass.....	101	2,142	2,688	"	27,483
Other tame or cultivated grasses.....	2,274	90,414	119,415	"	1,253,428
Wild, salt or prairie grasses.....	3,679	253,127	281,033	"	2,028,494
Grains cut green.....	39,397	1,604,745	2,019,526	"	24,056,727
Coarse forage.....	2,175	25,868	60,611	"	438,095
Root forage.....	1,021	4,012	90,586	"	266,015
Total hay and forage.....	53,760	2,533,347	4,327,130	.....	\$42,187,215

California grain cut in the milk is highly prized for hay and is sent East by the trainload for feeding race horses.

The acreage of standing alfalfa has probably increased 10 per cent since 1909, making it 532,847 acres. From these, five cuttings may be made yearly on irrigated ground with an average aggregate yield of six tons per acre. The yield and value of the crop for 1911 is probably 8 per cent over that of 1909.



Steamboat with Produce Barge in Sacramento River.

Beans and Other Field Crops. California is famous for the production of dried beans, onions, potatoes, etc., and they add much to the resources of the State. From the "Crop Reporter" and leading authorities in handling these products, the following figures are obtained of product and values for 1910:

Product	Quantity	Farm value at harvest time
Lima beans.....	1,300,000 sacks	\$5,500,000
Pink beans.....	700,000 "	2,250,000
Small white beans.....	125,000 "	400,000
Other varieties.....	510,000 "	1,680,000
Total beans.....	2,635,000 "	\$9,830,000
Sugar beets.....	1,000,000 tons	\$ 5,150,000
Onions.....	2,442,000 sacks	2,515,000
Potatoes, Irish.....	9,720,000 bushels	8,748,000
Potatoes, sweet.....	600,000 "	550,000
Field and garden seeds (estimated).....		2,250,000
Total value.....		\$30,043,000

Hop Crop. The hop crop in California, as elsewhere, varies greatly from year to year, influenced mainly by market prospects. The crop of 1911 was very remunerative to those growers who had not contracted early in the season at prevailing prices. Short crops elsewhere sent prices to a very high figure.

The acreage and production by counties for 1911 is as follows:

County	Acreage	Production in bales.
Sacramento	2,516	30,004
Yuba	1,122	9,885
Yolo	1,116	9,200
Butte	260	2,200
Sutter	120	842
Tehama	104	1,600
Shasta	40	150
Total, Sacramento Valley	5,278	53,881
Sonoma	4,300	27,600
Mendocino	1,385	10,500
Alameda	160	1,700
Santa Cruz	35	300
Total, Coast Counties	5,880	40,100
Total acreage grown in California.....	11,158 acres.	
Total number bales grown in California.....		93,981 bales.

Tobacco Growing. The adaptability of soil and climate to the growing of tobacco has been successfully demonstrated in many sections of the State, though it is not yet grown to a sufficient extent to be valued by the Department of Agriculture among the commercial crops of the State.

CALIFORNIA DEVELOPMENT BOARD

The following table gives California's crop for a series of years:

HOP PRODUCTION IN CALIFORNIA
1900-1911.

Year.	Bales	Pounds	Year.	Bales	Pounds
1900	38,000	7,220,000	1906	108,000	20,000,000
1901	48,000	9,120,000	1907	90,000	16,650,000
1902	53,500	10,165,000	1908	63,200	11,692,000
1903	57,000	10,545,000	1909	69,688	12,892,280
1904	63,000	11,655,000	1910	71,511	13,229,535
1905 .....	.....	13,135,000	1911	93,981	17,367,985

RICE, COTTON, FLAX, AND HEMP.

Rice. From experiments made in the Sacramento Valley during recent years by rice experts of the Department of Agriculture, the adaptability of soil and climate to the successful culture of rice has been demonstrated. Two tracts of twenty-five acres each were planted in 1908 in the vicinity of Biggs on black adobe lands. From one planting a yield of 3,000 pounds per acre was harvested.

This rice was awarded the gold medal at the Seattle Exposition in 1909.

Plantings made in 1910 justified the expectations of those interested both as to yield and quality.

The planting of 1911 given in the Crop Reporter as 150 acres yielding an average of 40 bushels per acre, 6,000 bushels in all, farm value \$4,000.

The principal planting is given by the owner as 60 acres, yielding 2,750 pounds per acre or 16,500 pounds in all.

Three varieties, Waterbune, Shinriki and Patna, chosen from a number previously tried, were used for this planting.

One planting of about 100 acres did not head out well and was cut for hay.

Other plantings were made on a small scale and had varying results.

The planting for 1912 will be on a much larger scale.

Rice bids fair to become one of the commercial crops of the State.

Cotton. The adaptability of soil and climate of California to the growing of cotton has been known for some years. Of late, planting has been begun on a large scale and the acreage is increasing.

In 1909 over 500 acres were planted in the Imperial Valley, Imperial County, with seeds from Georgia and Texas. The result was most gratifying, an average of over one bale, 500 pounds, to the acre being produced, some 600 bales in all, most of which found a ready market at the California Cotton Mills in Oakland. In 1910 some 12,000 acres were cultivated, producing 8,000 bales of excellent staple.

About 15,000 acres were planted in 1911, and according to the Crop Reporter, the production was 11,000 bales, 500 pounds each. It was valued for lint at \$385,000, and for seed at \$31,000; \$416,000 in all.

The acreage for next season is expected to be nearly double that of last.

The new industry has called for the erection of eight gins besides one or more cotton-seed oil mills.

The cotton growing has proved a success also in the Coachella Valley and at Semi-Tropic in Kern County, where a planting of 40 acres of Egyptian Cotton did well.

Cotton is being tried at other places in the State with encouraging results.

All the cotton produced in California will find a ready home market and probably cause additional factories to be added to the few already in operation in the State.

The Japanese are already in the field as buyers of California cotton.

Flax and Hemp. The culture of these valuable textile plants has lately received an impetus in several localities that promises important developments.

Beet Sugar. The beet sugar industry of the State grows yearly in importance.

In 1909 California produced over 28 per cent of the total product of the United States, and was second only to Colorado in output. In 1910, with an increased acreage and very favorable growing conditions, she surpassed all her previous records and took the first place, with a production of 144,746.7 tons. Michigan, her nearest competitor, followed with 112,100 tons, and Colorado, the late leader, came third with 98,560 tons.

For the campaign for 1911-12 the acreage of sugar beets harvested in California is given by good authority at about 101,000 acres yielding over 1,000,000 tons of beets and the production of 3,250,000 sacks of 100 pounds each, or 162,538.4 short tons or 325,000,769 pounds, worth at 4 cents per pound, over \$13,000,000, leaving California in the lead among the beet sugar producing States and with about the same percentage of the production of the United States, which is given at 572,415 tons of 2,000 pounds each.

The factories and their locations were:

Spreckels Sugar Co., Spreckels, Monterey County.
Spreckels Sugar Co., Watsonville, Santa Cruz County.
American Beet Sugar Co., Oxnard, Ventura County.
American Beet Sugar Co., Chino, San Bernardino County.
Alameda Sugar Co., Alvarado, Alameda County.
Union Sugar Co., Betteravia, Santa Barbara County.
Los Alamitos Sugar Co., Los Alamitos, Orange County.
Southern California Sugar Co., Santa Ana, Orange County.
Sacramento Valley Sugar Co., Hamilton, Glenn County.
Pacific Sugar Co., Visalia, Tulare County.
Pacific Sugar Co., Corcoran, Kings County.
Anaheim Sugar Co., Anaheim, Orange County.
Holly Sugar Co., Long Beach, Los Angeles County.

The plant at Watsonville and the plants of the Pacific Sugar Company at Visalia and Corcoran were not operated during 1911. Two new plants entered the lists, the Anaheim Company at Anaheim, Orange County, and the Holly Sugar Company at Long Beach, Los Angeles County. One new factory is in course of construction at Irvine, Orange County for the coming campaign. Six others are mentioned as being projected. The prices paid to growers of sugar beets the past season were the highest in the history of the industry.

The Alameda Co.'s plant has moved from Alvarado and will operate the coming season near Meridian in Sutter County.

California was the pioneer in the beet-sugar industry of the country. The first plant operated in the United States was the one at Alvarado, Alameda County.

The plant at Spreckels in Monterey County is the largest beet-sugar factory in the world.

The average yield of sugar beets per acre and the average percentage of sugar in California beets is greater than in Colorado or Michigan. In some parts of California the soil and climatic conditions are superior for the cultivation of sugar beets. The large average percentage of sunlight is probably the main factor in the results obtained.

The growth of the industry in California is shown in the following exhibit for twenty-four years, beginning with 1888, that being the first year statistics were obtained and published by the State Board of Trade:

CALIFORNIA DEVELOPMENT BOARD

BEET SUGAR PRODUCTION OF CALIFORNIA—TONS OF 2,000 LBS.

Year.	Tons.	Year.	Tons.
1888	1,910	1900	30,319
1889	2,457	1901	68,700
1890	3,351	1902	73,761
1891	5,224	1903	65,360
1892	10,761	1904	59,147
1893	17,420	1905	64,251
1894	18,615	1906	94,285
1895	23,827	1907	72,889
1896	31,815	1908	99,613
1897	35,280	1909	126,621
1898	18,086	1910	144,747
1899	42,100	1911	162,538

Taken altogether, the industry is on a most satisfactory basis and bids fair to become one of the large money producers of the State.

MINERAL PRODUCTION OF CALIFORNIA FOR 1908-1910—On Authority of State Mining Bureau.

Products	1908		1909		1910	
	Quantity	Value	Quantity	Value	Quantity	Value
Asbestos..... tons.	70	\$ 6,100	65	\$ 6,500	200	\$ 20,000
Asphalt..... tons	105,443	1,082,376	136,644	1,707,159	184,967	2,125,122
Bituminous rock..... tons	30,718	109,818	34,123	116,436	87,547	165,711
Borax (crude)..... lbs.	44,400,000	117,000	32,257,000	1,163,960	33,656,000	1,177,960
Cement..... bbls.	1,629,615	2,359,692	3,779,205	4,968,437	5,453,193	7,485,715
Chrome..... tons	350	6,195	436	5,309	749	9,707
Clays (brick)..... M	332.872	2,506,495	333,846	3,059,929	340,883	2,934,731
Clays (pottery)..... tons	208,042	325,147	299,424	465,647	249,028	324,099
Coal..... tons	18,496	55,503	49,389	216,913	11,033	23,484
Copper..... lbs.	40,868,772	5,350,777	65,727,736	8,478,142	53,721,032	6,680,641
Fuller's earth..... tons	50	1,000	459	7,385	340	3,820
Gems.....		208,950		193,700		237,475
Gold..... ozs.	18,761,559			20,237,870		19,715,440
Granite..... cu. ft.	483,374	512,923	358,008	376,834	486,098	417,898
Gypsum..... tons	34,600	155,400	30,700	138,176	45,294	129,152
Infusorial earth..... tons	2,950	32,012	500	3,500	1,843	17,617
Iron ore..... tons			108	124	579	900
Lead..... tons	562	46,663	1,343	144,897	1,508	134,082
Lime.....	396,386	379,243	520,752	577,824		
Limestone..... tons	273,890	297,264	337,676	419,921		1,058,891
Macadam..... tons	2,939,901	2,446,768	3,567,120	1,636,125	2,350,398	1,104,526
Magnesite..... tons	10,582	80,822	7,942	62,588	16,570	113,887
Manganese..... tons	321	5,785	3	75	265	4,235
Marble..... cu. ft.	18,653	47,665	79,600	238,400	18,960	50,200
Mineral paint..... tons	335	2,250	305	2,325	200	2,040
Mineral water..... gals.	2,789,715	560,507	2,449,834	465,488	2,335,259	522,009
Natural gas..... M cu. ft.	842,883	474,584	1,148,467	616,932	10,579,933	1,676,367
Paving blocks..... M	7,660	334,780	4,503	199,803	4,434	198,916
Petroleum..... bbls.	48,306,910	26,566,181	58,191,723	32,398,187	77,697,568	37,689,542
Platinum..... ozs.	706	13,414	416	10,400	337	8,386
Pyrites..... tons	107,081	610,335	457,867	1,389,802	42,621	179,862
Pumice stones..... tons			50	500		
Quartz crystals..... lbs.	4,000	10,000				
Quicksilver..... flasks	18,039	763,520	16,217	773,788	17,665	799,002
Rubble..... tons	1,059,044	795,006	1,964,441	1,071,701	3,477,430	1,673,164
Salt..... tons	121,764	281,469	155,680	414,708	174,920	395,417
Sand (glass)..... tons	9,255	22,045	12,259	25,517	9,124	8,165
Sandstone..... cu. ft.	93,301	55,151	79,240	37,032	165,971	80,443
Silver (commercial value)..... ozs.		873,057	2,098,253	1,091,092		993,646
Slate..... squares	6,000	50,000	6,961	45,660	1,000	8,000
Soda..... tons	9,600	14,400	7,712	11,593	8,125	11,862
Soapstone..... tons			33	280	740	7,260
Tungsten.....		37,750		190,500		208,245
Zinc..... lbs.		3,544				
Other minerals.....					11,720	21,460
Total.....		\$66,363,150		\$82,972,209		\$88,419,079

NOTE:—"Other Minerals" includes the following which were not listed for 1908 and 1909:

Barytes.....	860 tons	\$ 5,640
Feldspar.....	760 tons	5,720
Sand, quartz.....	10,100 tons	10,100
		\$21,460

Other Mineral Output. The gold production for 1910, \$19,715,440, was less than in 1909 but larger than any year previous since 1883. The production in 1911 is given by the U. S. Geological Survey at \$20,310,937.

The copper production, less than in 1909 by over 12,000,000 pounds, is 53,721,032 pounds, valued at \$6,680,641.

Cement with an output of 5,453,193 bbls., and valued at \$7,485,715, exceeded the record for 1909 and was more than double any previous year.

Petroleum, however, was the great contributor to the mineral production, the output being 77,697,568 bbls., nearly 19,000,000 more than for 1909, valued at \$37,689,542. The production for 1911 was 83,744,044 bbls.

The report of the State Mining Bureau gives full and comprehensive statistics of the mining industry.

PETROLEUM PRODUCTION.

Petroleum. The production of all the California Oil Fields in order of their magnitude for the year 1911 was as follows:

Field	County	Wells Producing	Total Production in barrels.
Midway	Kern	447	21,584,566
Coalinga	Fresno	736	18,324,701
Kern River	Kern	1,605	14,078,390
Santa Maria	Santa Barbara	154	6,670,074
Fullerton	Orange	250	5,978,823
Sunset	Kern	196	5,559,069
McKittrick	Kern	178	5,447,532
Salt Lake	Los Angeles	245	2,794,233
Whittier	Los Angeles	141	1,069,437
Lompoc	Santa Barbara	20	795,000
Santa Paula	Ventura	264	515,675
Los Angeles	Los Angeles	415	429,528
Lost Hills	Kern	4	154,960
Newhall	Los Angeles	76	146,110
Summerland	Santa Barbara	131	71,255
Watsonville	Santa Cruz	4-5	40,850
Puente	Los Angeles	56	32,895
Arroyo Grande	San Luis Obispo	4	20,500
Total, all districts and operations		4,942	83,744,044

The output of petroleum in California for the years 1900 to 1911, inclusive, from private sources, and the production in the United States, from the U. S. Geological Survey, is as follows:

Year	California (barrels)	United States (barrels)	Year	California (barrels)	United States (barrels)
1900	4,000,000	63,620,529	1906	32,516,600	126,493,936
1901	8,000,000	69,389,194	1907	40,101,360	166,095,335
1902	13,973,500	88,766,916	1908	48,300,758	178,527,355
1903	24,337,828	100,461,337	1909	58,191,723	183,170,874
1904	24,423,860	117,080,960	1910	77,697,568	209,556,048
1905	34,275,701	134,717,580	1911	83,744,044	217,000,000

Production of petroleum in the United States as above, shows a very material and constant increase during the last few years, and is an important factor in industrial development.

TOTAL YIELD OF UNITED STATES BY FIELDS (Official Figures)

Field	1905	1906	1907	1908	1909	1910	1911
Appalachian	29,366,960	27,741,472	25,342,137	24,945,517	26,535,844	26,891,379	
Lima-Ind'na	22,294,171	17,554,661	13,121,094	10,032,305	8,211,443	1,235,861	Estimated
Illinois	181,084	4,397,050	24,281,973	33,685,106	30,898,339	33,143,362	total pro-
Mid,contn't.	12,535,777	22,838,553	46,846,267	48,323,810	49,804,922	53,875,072	duction of
Gulf	36,526,323	20,527,520	16,410,299	17,318,330	11,912,058	15,022,975	all fields
California . .	33,427,473	33,098,598	39,748,375	44,854,737	54,433,010	73,010,560	
Other	385,792	336,082	345,190	412,674	338,658	358,839	
Total	134,717,580	126,493,936	166,095,335	179,572,479	182,134,274	209,538,048	217,000,000

California easily holds the position of the largest producer in the United States, producing nearly 38.17 per cent of the total production in 1910.

In this connection the production of petroleum in the various countries of the world is of interest.

WORLD'S PRODUCTION 1906-1910
(Barrels of 42 Gallons)

Country	1906	1907	1908	1909	1910
United States.....	126,493,936	166,095,335	179,572,479	182,134,274	209,556,048
Russia.....	58,897,311	61,850,734	62,186,447	65,970,350	70,336,574
Sumatra, Java, Borneo.....	8,662,572	8,377,099	8,752,822	11,041,852	12,673,688
Galicia.....	5,467,967	8,455,841	12,612,295	14,932,799	11,030,620
Roumania.....	6,378,184	8,118,207	8,252,157	9,221,138	9,722,958
India.....	4,015,803	4,344,162	5,047,038	6,676,517	6,137,990
Japan.....	1,710,768	2,010,639	2,070,929	2,012,409	3,322,807
Mexico.....		1,000,000	3,481,410	2,488,742	1,930,661
Canada.....	569,753	788,872	527,987	420,755	1,330,105
Germany.....	578,610	756,631	1,009,278	1,018,837	1,032,522
Peru.....	534,929	741,226	1,011,180	1,316,118	315,895
Italy.....	53,577	59,875	a60,000	a50,000	42,388
Other.....	a30,000	a30,000	a30,000	a30,000	a30,000
	213,393,410	622,628,621	284,614,022	297,413,791	327,472,256

a Estimated.

California produced approximately 22 per cent of the world's output in 1910. The United States produced over 64 per cent of the total supply.

According to Bradstreet the oil companies of California have returned to the stockholders over \$60,000,000 in dividends in twenty years ended 1910.

PIPE LINES.

To take care of California's great petroleum production a vast system of pipe lines has been constructed, a brief description of which may be of interest.

Four lines in operation are in the Coalinga field. The Standard Oil Company has two lines, one of 8-inch and one of 6-inch pipe, 133 miles in length, with terminals at Point Richmond on the Bay of San Francisco. The Associated Transportation Company has one 6-inch line in operation, 110 miles in length, with terminal at Monterey; also a line at Salinas, and another line of 8-inch rifled pipe in course of construction, which will be 198 miles long when completed, from Coalinga to the terminal at Port Costa. The Producers' Transportation Company has just completed (March, 1910) and put in operation an 8-inch pipe line from Coalinga to Port Harford, about 100 miles in length, which makes a junction in the Devil's Den District with a line coming north from McKittrick, Midway and Bakersfield. It is said that the pipe line from the junction to Port Harford will soon be doubled. Shipments of crude oil are also made from this field by railroad.

The Associated Pipe Line Company has an 8-inch rifled line extending from the Kern River field to Port Costa, and the Standard Oil Company has lines running from this field to Point Richmond, a line from the Midway field connecting with them. The field is also tapped by the Southern Pacific Railroad. The crude petroleum produced in the McKittrick and Sunset fields in 1909 was shipped by rail.

Three pipe lines transport petroleum from the Santa Maria oil field. The Union Oil Company has two lines, one of 6-inch and one of 8-inch pipe, from Orcutt and Lompoc to Port Harford. The Standard Oil Company has an 8-inch line to Port Harford and the Associated Transportation Company has an 8-inch line to Gaviota. Shipments are also made from this field by rail from Careaga, Orcutt and Palmers.

FOREST PRODUCTS.

The lumber cut of California for a series of years since 1880, as given by the U. S. Government reports, presents some interesting contrasts of amount of production:

LUMBER CUT IN CALIFORNIA FOR YEARS FROM 1880 TO 1910.
From Government Report.

	M. Feet.	Mill Value.
1880	304,795	
1890	515,323	
1900	734,232	
1905	1,077,499	
1906	1,348,599	
1907	1,345,943	\$23,640,966
1908	966,115	15,211,055
1909	1,144,000	17,160,000
1910	1,270,000	18,050,000
1911 (estimated)	1,138,000	18,208,000

The cut for 1911, estimated from mill reports, cargo shipments and other sources of information, is also given.

The cut for 1911 as well as that for 1909 and 1910, exceeds that of 1908, which for a number of reasons fell far below the three preceding years.

KINDS OF LUMBER CUT IN CALIFORNIA 1910-1911.
(Quantities Approximated.)

Kinds	1910—Feet.	1911—Feet.
Redwood	600,000,000	541,000,000
Western Pine or White	350,000,000	325,000,000
Douglas Fir	110,000,000	95,000,000
Sugar Pine	100,000,000	90,000,000
White Fir	60,000,000	50,000,000
Spruce	30,000,000	18,000,000
Cedar	15,000,000	15,000,000
Western Hemlock	1,000,000	500,000
Oak	1,000,000	750,000
Ash and other	3,000,000	2,750,000
Total	1,270,000,000	1,138,000,000

In addition to the lumber cut as above, California produced about 450 million shingles and shakes, with a large number of poles, ties, etc.

The following estimate is given by the "Pacific Lumber Trade Journal" of January, 1907, as to the Pacific Coast States and Idaho, Montana and British Columbia:

	M. Board Feet.
Oregon	225,000,000
Washington	195,658,080
California	180,000,000
Idaho and Montana	100,000,000
British Columbia	150,000,000
Total	850,658,080

At the low estimate of \$3.00 per thousand feet for stumpage, the value of timber in California as it stands in the forest is \$540,000,000. This is a large sum, but is doubtless within the truth.

The estimated wooded area of California is 28,608,000 acres. Approximately 24,058,050 acres are in National forest reserves and 4,549,950 acres in private ownership or unreserved.

The conservation of the forest areas of California is most intimately related to the welfare of the State. No greater calamity could befall the State than the denudation of the wooded lands. On the other hand, incalculable benefit will come from wise conservation of the forests and a reforestation of the already denuded areas. Conservation of natural resources must of necessity include the forests and the streams. Happily a wise governmental policy has saved enough of these areas to give assurance that their relation to the common welfare will not be seriously impaired.

Redwood. It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "clear lumber." The redwood (*Sequoia Sempervirens*) is indigenous to California, and except for a few stunted trees in Japan, is found in no other country. This growth covers a tract on the northwestern coast of California, beginning at the northern line (there being not over 2,000 acres over the line in Oregon) and occupies a continuous district from the seacoast eastward to the crest of the Coast Range of mountains about 240 miles long (north and south) and from 10 to 20 miles wide.

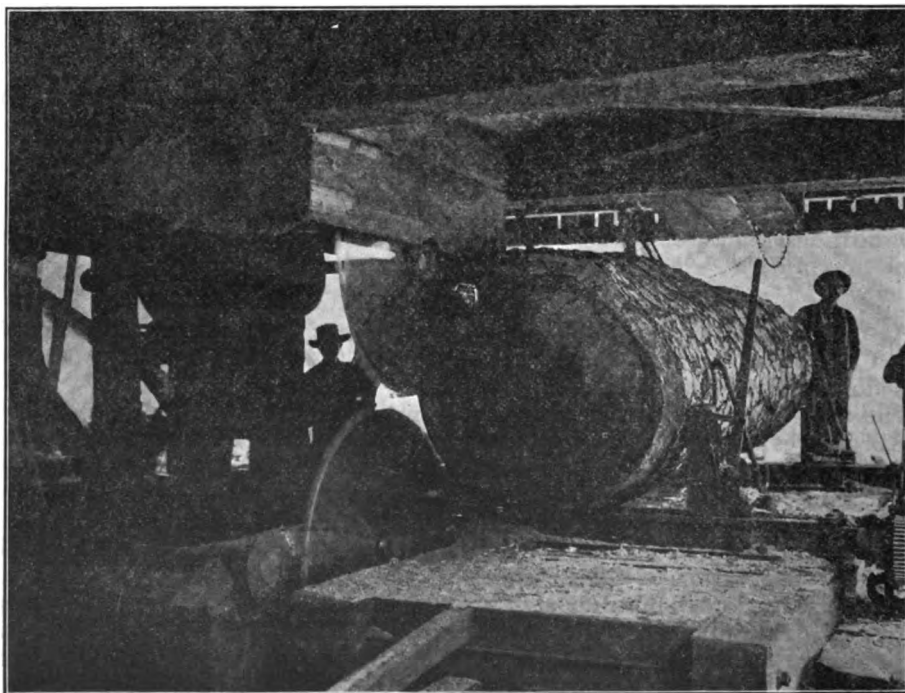
In this district there were originally about 1,200,000 acres of redwood timbered lands, comprising practically the world's entire supply of this magnificent wood.

The mills have removed probably not more than 20 per cent of the original standing timber, having during the fifty years averaged 220,000,000 feet per annum. The cut since 1903 from this district (comprising the counties of Del Norte, Humboldt, Mendocino and Sonoma), has averaged nearly 400,000,000 feet.

The following figures give the annual receipts at San Francisco from the California mills north of San Francisco Bay since and including 1900:

	Feet.
1900	209,001,022
1901	244,386,075
1902	262,597,015
1903	301,343,953
1904	324,676,960
1905	347,679,159
1906	409,702,573
1907	437,514,653
1908	356,549,880
1909	402,519,307
1910 (Estimated)	450,000,000
1911	311,174,000

The above figures do not represent the actual cut, as there is about 40,000,000 to 50,000,000 feet sold in the neighborhood of the mills and about 20,000,000 feet annually consumed in San Mateo and Santa Clara Counties that is cut there. Then there is to be added still the quantity consumed in making ties, laths, shingles, shakes, etc., which will not fall far short of 90,000,000 feet a year.



Sawing a 55-inch log—Two saws cutting at once

Pine. The Western slope of the Sierras in California, Arizona and in Oregon are covered with a mighty forest where the Sugar Pine, (*Pinus Lambertiana*), the White Pine (*Pinus Ponderosa*), and the "Bull" Pine (*Pinus Jeffri*), flourish. Cedar is also found there and other woods. The woods with the best timber are found at elevations from 3,000 to 7,000 feet. The general run of sugar and white pine is from 3 feet to 8 and 12 feet in diameter, while the height sometimes reaches 250 feet. The territory covered is estimated to be about 400 miles in length with an average breadth of about 20 miles. The woods are white, soft and durable and are greatly in esteem in the East where practically the whole cut is sold, outside of the inferior grades which are disposed of locally. They are unsurpassed for doors, sashes, piano keyboards, matches, finish, ceiling, etc., in a word, wherever strength, durability and ease in working, cleanliness and stability are required. There are many great plants in the interior, and one agency with \$1,000,000 capital, does the selling for a large number of mills. This helps to keep prices steady and always finds a market. The great railroad lines carry their product to every part of the United States. The work of lumbering is practically the same as in the redwood districts, steam machinery as a rule getting the logs to the mills, though in some instances ox teams are still used. Here, as in the redwood country, there are immense log ponds where the logs are stored away for the mills. The cut has run from 300,000,000 to 500,000,000 feet a year, this including mountain pine and red fir, but owing to the bad weather in the mountains lumbering in 1909 did not generally begin until June and the cut was short. The financial panic in the East also helped to lessen it in 1908. The present year, however, will restore normal conditions in this great section of the lumber industry. The production of 1900 and since 1905 may be given as follows:

	Sugar Pine. Feet.	White Pine. Feet.
1900	53,558,000	200,000,000
1906	130,231,000	347,249,000
1907	115,005,000	381,700,000
1908	92,500,000	318,406,000
1909	95,000,000	225,000,000
1910	100,000,000	350,000,000
1911	90,000,000	325,000,000

RAILWAYS.

Railways. The year 1911 saw notable progress in railroad extension and betterment in California, as the statement below shows. In new electric construction, California leads with 121 miles, followed by North Carolina and Illinois, 104 miles each.

The work on the Rocklin-Colfax cut off, on the Southern Pacific-Ogden route, estimated to cost \$10,000,000 has been pushed, and is expected to be ready for operation by July. This cuts off some 30.8 miles, has a maximum grade of 1.5 per cent and a maximum curvature of but 6 per cent.

The electrification of the suburban lines of the same company has been completed at a cost of about \$10,000,000, and they are now in operation.

The Dumbarton cut-off, across the lower end of San Francisco Bay, was opened for traffic September 24, 1910. This, with the Bay Shore "cut-off," ten miles in length from San Francisco south, gives quicker and more convenient access to the city. The cost of the two works has been \$10,500,000.

Work is being continued on the Sacramento Southern, a new Southern Pacific line, via the Dumbarton cut-off, which will give a new direct all-rail line between San Francisco and the Capital City.

The Santa Fe cut-off of 83.33 miles in length from Cadiz to Parker, at the State line on the Colorado River, have much improved the service. Also the second main track between Daggett and Cottonwood.

The completion of the gap, 79 miles, between Shiveley and Willits on the Northwestern Pacific, under the joint control of the Southern Pacific and Santa Fe, is expected soon, and means all-rail connection between San Francisco and Eureka, on Humboldt Bay.

The amount of money invested in California railroads is out of all proportion to the mileage, for one mile in the mountains cost more than twenty miles in the prairie states.

The following will give the facts relating to railway progress in California:

RAILROAD MILEAGE IN CALIFORNIA
(From Annual Reports to the Railroad Commission)
STEAM RAILROADS

Class of track	June 30, 1910 Miles	June 30, 1911 Miles	Increase Miles
Main line	7,276.21	7,541.27	265.06
Second track	182.06	241.63	59.57
Yard tracks and sidings	2,647.27	2,786.94	139.67
Total	10,105.54	10,569.84	464.30

ELECTRIC—INTERURBAN RAILROADS*

Class of track	June 30, 1910 Miles	June 30, 1911 Miles	Increase Miles
Main line	919.78	1,092.95	173.17
Second track	414.35	465.01	50.66
Yard tracks and sidings	148.81	175.03	26.22
Total	1,482.94	1,732.99	250.05

*Does not include lines that are strictly street railroads.

The increase in mileage noted above does not necessarily mean that all this railroad has actually been built in the State during the past year. It includes all new mileage and such other mileage previously built that passed under the Commission's jurisdiction.

MAIN LINE OF PRINCIPAL STEAM RAILROADS:

Southern Pacific Lines	3,882.28	Miles
Santa Fe Lines	1,389.18	"
Western Pacific	388.14	"
Northwestern Pacific	376.28	"
San Pedro, Los Angeles and Salt Lake	246.40	"
Nevada-California-Oregon	192.35	"
Tonopah and Tidewater	144.60	"
Pacific Coast	99.22	"
San Diego and Arizona Lines	87.79	"
Yosemite Valley	79.17	"
Sierra Valley	75.64	"

MAIN LINE OF PRINCIPAL ELECTRIC INTERURBAN RAILROADS:

Pacific Electric Lines	577.39	Miles
Oakland Traction Lines, including Key Route	136.64	"
Northern Electric Lines	115.28	"
Central California Traction	55.29	"
Peninsular	41.85	"
San Francisco, Napa & Calistoga	33.84	"
Petaluma & Santa Rosa	31.60	"

PRINCIPAL RAILROADS CONSTRUCTED DURING THE YEAR ENDING JUNE 30, 1911:

Porterville & Northeastern	10.00	Miles
Oakland & Antioch	14.60	"
Central California Traction Company	15.00	"
Laton and Western	15.52	"
Nevada and California	29.70	"
Arizona and California	83.33	"
Central California	11.09	"

RAILWAYS OF CALIFORNIA

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RAILROADS NOW UNDER CONSTRUCTION IN CALIFORNIA:

Northern Electric—Sacramento to Woodland	18	Miles
Northern Electric—Woodland to Vallejo	50	"
Hanford and Summit Lake	50	"
San Joaquin Valley Electric—Stockton to Modesto	25	"
Clear Lake Railroad—Hopland east	6	"
Oakland and Antioch—Oakland to Sacramento	75	"
San Diego & Arizona—San Diego to Seely	75	"
Tidewater and Southern—Modesto to Stockton	25	"
Southern Pacific—Hamilton to Arbuckle	61	"
Laton and Western—Lenare west	15	"
Total	400	Miles

PRINCIPAL RAILROADS PROJECTED FOR CONSTRUCTION:

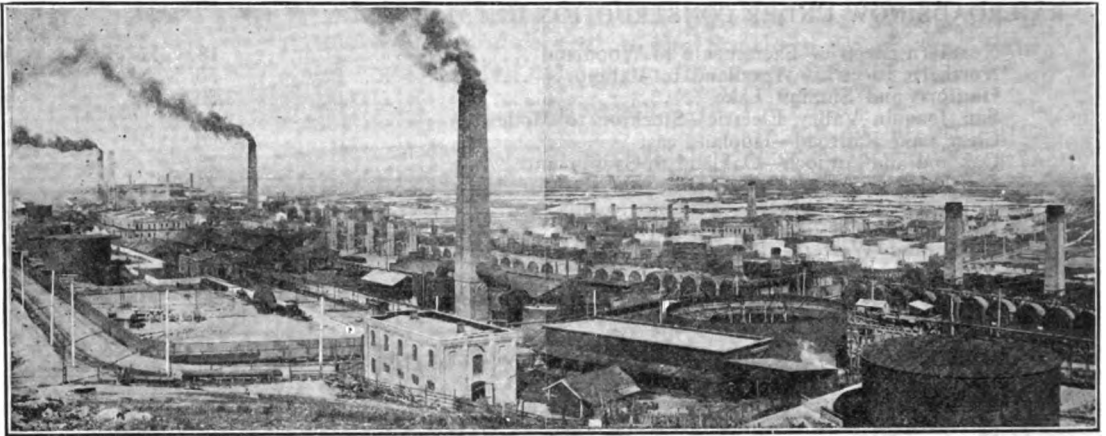
Northern Electric—Woodland to Benicia	50	Miles
Northern Electric—Chico to Redding	70	"
Northern Electric—Marysville to Colusa	28	"
Central California Traction Co.—Compton to Lockeford	6	"
San Jose & Alameda—San Jose north	12	"
Key Route—Oakland to San Jose	35	"
Cement, Tolenas & Tidewater—Tolenas to Rush Ld.	6	"
Hacienda Railroad—San Jose to Hacienda	14	"
Fresno & Eastern—Fresno to Shaver Lake	80	"
California & Plumas—Sinclair to Big Meadow	27	"
Sacramento & Eastern—Sacramento to Folsom	20	"
Pittsburg Ry.—Somersville to Pittsburg Landing	6	"
Total	354	Miles

MANUFACTURING (U. S. Census Report, 1910) Summary for the State, 1909

	Census, 1909	Per cent of increase 1904-1909
Number of establishments	7,659	12
Capital	\$537,134,000	90
Cost of materials used	\$325,238,000	51
Salaries and wages	\$107,097,000	35
Miscellaneous expenses	\$43,819,000	61
Value of products	\$529,761,000	44
Value added by manufacture (products less cost of materials)	\$204,323,000	35
Employees—		
Number of salaried officials and clerks	18,203	48
Average number of wage earners employed during the year	115,296	15
Primary horsepower	329,100	56

Following are tables compiled to show the growth of manufacturing between 1850 and 1909:

Capital invested			Value of products		
Year	Amount	Increase over previous decade	Year	Amount	Increase over previous decade
1850	\$ 1,006,197		1850	\$ 12,862,522	
1860	22,043,096	2097.7	1860	68,253,228	430.6
1870	39,728,202	80.2	1870	66,549,566	-2.4
1880	61,243,784	54.2	1880	116,218,973	74.5
1890	146,797,102	139.7	1890	213,403,996	83.6
1900	205,395,025	39.9	1900	302,874,761	41.9
1909	537,134,000	161.5	1909	529,761,000	74.8



Standard Oil Refining Plant at Richmond, California

Work now in progress will double the size and make it the largest in the world. Three pipe lines bring the oil from the fields 300 miles away. 173 different products are made from the oil.

	San Francisco		Los Angeles		Oakland		Sacramento	
	Census 1909	Per cent of increase, 1904-1909	Census 1909	Per cent of increase 1904-1909	Census 1909	Per cent of increase 1904-1909	Census 1909	Per cent of increase 1904-1909
Number of establishments.....	1,795	—20	1,325	63	441	78	211	35
Capital.....	\$133,760,000	31	\$59,518,000	111	\$19,113,000	109	\$10,097,000	37
Cost of materials used.....	\$76,175,000	*	\$38,913,000	108	\$11,847,000	175	\$6,893,000	34
Salaries and wages.....	\$30,452,000	—4	\$16,500,000	82	\$6,618,000	167	\$4,534,000	34
Miscel. expenses.....	\$13,053,000	5	\$5,649,000	106	\$2,094,000	145	\$1,356,000	77
Value of products.....	\$132,929,000	—4	\$68,586,000	97	\$22,343,000	148	\$13,977,000	39
Value added by manufacture (products less cost of materials).....	\$56,754,000	—8	\$29,673,000	84	\$10,496,000	123	\$7,084,000	44
Employees:								
Number of salaried officials and clerks....	6,116	18	3,367	68	1,079	177	533	42
Average number of wage earners employed during year.....	28,239	—27	17,327	66	6,905	106	4,514	7

—Decrease.

*Less than one per cent increase.

OTHER PRINCIPAL MANUFACTURING POINTS

	Fresno	Stockton	San Jose	Richmond	San Diego	Eureka
Number establishments.....	76	144	153	25	117	48
Capital.....	\$4,933,000	\$8,250,000	\$3,815,000	\$14,550,000	\$5,326,000	\$3,306,000
Salaries and wages.....	\$1,431,000	\$1,681,000	\$1,152,000	\$2,760,000	\$1,069,000	797,000
Wage earners.....	1,936	1,594	1,430	3,420	1,071	946
Value of output.....	\$11,090,000	\$11,849,000	\$5,610,000	\$11,250,000	\$4,741,000	\$3,012,000

STEAM LAUNDRIES

Steam laundries were not enumerated previous to 1909, but they have become such an important factor in the domestic problem of city life that the following exhibit is made from the census report.

	San Francisco	Los Angeles	Oakland	Sacramento
Number of establishments.....	87	31	41	10
Capital invested.....	\$1,497,000	\$1,822,000	\$682,000	\$239,000
Value of output.....	\$2,663,000	\$2,364,000	\$1,067,000	\$334,000
Officials and clerks.....	169	155	98	22
Wage earners.....	2001	2,209	845	259
Salaries and wages.....	\$1,503,000	\$1,354,000	\$584,000	\$175,000

Water-Power and Electrical Development.

Closely connected with the future of manufacturing developments is the fuel and water-power supply convertible into electrical power. The statistics of oil production are given on a preceding page. The following extract from Water Supply Paper, No. 234, in the report of the U. S. Geological Survey is of much interest:

CALIFORNIA'S WATER-POWER.

Source.	DEVELOPED.		UNDEVELOPED.	
	Wheels.	Horsepower.	Minimum.	Maximum Development
Sacramento River	576	280,735	Sacramento River	2,420,000 4,580,000
San Joaquin River	159	86,224	San Joaquin River (including Tulare Lake drainage)	759,000 3,140,000
Minor streams, southern	74	50,183	Minor streams, northern ..	600,000 1,200,000
Minor streams, northern ...	176	25,440	Sierra Nevada drainage...	132,000 202,000
Sierra Nevada drainage	74	17,737	Minor streams, southern ..	36,400 88,300
San Francisco Bay	11	6,455		
Totals	1,070	446,744	Totals	3,947,000 9,210,300

California has not heretofore been classed among the states in which manufactures was a leading industry, but with abundant oil for fuel for manufacturing power and motive-power on the one side, and with 9,000,000 horsepower in water-power maximum development and a widening of markets both at home and in the Orient, California can face her industrial future with confidence.

A. L. McDonald, Statistician.

Robert Newton Lynch,

Approved by the Board and ordered printed.

Vice-Pres. and Mgr.

NOTE—For data and statistics used in this report we are indebted to the Controller of U. S. Treasury; Prof. Alexander G. McAdie, California Section U. S. Weather Bureau; U. S. Department of Agriculture; George Robertson, State Statistician; State Superintendent of Banks; State Mining Bureau; State Controller; San Francisco and other clearing houses; California Fish Commission; Superintendent of Public Instruction; State Dairy Bureau; State Railroad Commission; Auditing, Freight and Engineering Departments of Southern Pacific, Santa Fe and Western Pacific Railroads; United Railroads of San Francisco; Wine and Spirit Review, Petaluma Journal; H. P. Dimond, Secretary Dried Fruit Association; California Fruit Grower; Western Packer & Canner; Pacific Rural Press; Pacific Lumber Trade Journal; Oakland Tribune; California Wine Association; Italian Swiss Colony; Frank D. Flint & Co.; Adolph Koshland; Peter J. Shields; W. E. Sprott of the Tulare County Citrus Fruit Exchange; Campodonico, Burns, Corriea Co.; E. W. Maslin; E. H. Tryon, E. Clemens Horst; J. K. Armsby Co.; Castle Bros. A. K. Tichenor, Secretary Alaska Packers' Association; Pacific Fisherman; Frank Adams, Irrigation Manager Agricultural Experiment Station, U. C.; Edwin F. Adams, San Francisco Chronicle; Pacific Steam Whaling Co.; C. P. Overton, Manager Union Fish Co.; W. D. McArthur, Dairy & Produce Broker, San Francisco; Sunset Magazine; various lumber dealers; the several beet-sugar refineries; Chamber of Commerce of San Francisco; Boards of Trade and Chambers of Commerce of various counties of the State; Board of Supervisors and Board of Public Works, San Francisco; Boards of Supervisors of various counties of the State; Sacramento Valley Development Association; and many growers, producers, and others throughout the State.

CALIFORNIA DEVELOPMENT BOARD

CLIMATOLOGICAL DATA FOR 1911

Stations	Counties	Eleva- tion, feet	Temperature Degrees Fahrenheit			Precipitation inches		Rainy days	Sky			Part of country
			Annual Mean	High- est	Low- est	Total for year, inches	Total snowfall inches		Clear days	Partly cloudy days	Cloudy days	
Independence.....	Inyo.....	3907	55.6	100	4	5.56	4.5	21	229	103	33	Mountain and high plateau.
Hornbrook.....	Siskiyou.....	2154	50.6	99	5	9.96	23.5	30	268	21	67	Mountain and high plateau.
Alturas.....	Modoc.....	4460	44.6	101	-21	10.13	63.0	74	204	106	55	Mountain and high plateau.
Dunsmuir.....	Siskiyou.....	2285	51.7	111	12	50.43	87.5	81	240	16	109	Mountain and high plateau.
Quincy.....	Plumas.....	3400	46.0	96	-5	46.94	169.0	56	265	35	65	Mountain and high plateau.
Summit.....	Placer.....	7017	40.1	80	-8	60.56	786.0	65	260	8	97	Mountain and high plateau.
Tamarack.....	Alpine.....	8000	35.2	86	-26	79.61	716.0	88	223	46	96	Mountain and high plateau.
Yosemite.....	Mariposa.....	3945	50.0	98	-1	38.30	82.1	64	221	63	81	Mountain and high plateau.
Redding.....	Shasta.....	5052	61.9	108	25	28.76	6.8	66	233	45	87	Sacramento and San Joaquin valleys.
Red Bluff.....	Tehama.....	307	61.1	112	26	22.69	3.1	61	228	64	73	Sacramento and San Joaquin valleys.
Orland.....	Glenn.....	254	61.3	111	24	19.51	0	55	246	60	49	Sacramento and San Joaquin valleys.
Colusa (B. R.).....	Colusa.....	60	.....	105	23	.....	.....	.....	.....	.....	.....	Sacramento and San Joaquin valleys.
Sacramento.....	Sacramento.....	71	58.4	100	30	21.11	0	53	255	56	54	Sacramento and San Joaquin valleys.
Stockton.....	San Joaquin.....	23	57.7	98	25	19.50	0	49	263	60	42	Sacramento and San Joaquin valleys.
Merced.....	Merced.....	173	60.6	105	24	16.67	0	44	286	18	61	Sacramento and San Joaquin valleys.
Fresno.....	Fresno.....	293	62.3	111	24	11.25	T	45	238	79	48	Sacramento and San Joaquin valleys.
Bakersfield (B. R.).....	Kern.....	404	.....	105	30	.....	0	.....	.....	.....	.....	Sacramento and San Joaquin valleys.
Fruto.....	Glenn.....	624	60.3	114	25	20.68	3.0	40	283	0	81	Poohills Sacramento and San Joaquin valleys.
Oroville (near).....	Butte.....	250	60.5	112	25	29.14	0	48	220	54	91	Poohills Sacramento and San Joaquin valleys.
Nevada City.....	Nevada.....	2580	53.1	102	13	64.97	52.5	84	231	45	89	Poohills Sacramento and San Joaquin valleys.
Rocklin.....	Placer.....	249	62.0	109	27	32.66	T	49	281	11	73	Poohills Sacramento and San Joaquin valleys.
Placerville.....	El Dorado.....	1875	55.5	114	18	51.01	0	64	233	43	89	Poohills Sacramento and San Joaquin valleys.
Jamestown.....	Tuolumne.....	1471	57.0	104	19	24.41	17.0	48	278	15	72	Poohills Sacramento and San Joaquin valleys.
Lemon Cove.....	Tulare.....	600	64.3	115	26	16.23	0	24	247	69	49	Poohills Sacramento and San Joaquin valleys.
Reedley.....	Fresno.....	347	61.1	108	22	13.14	0	21	254	23	88	Poohills Sacramento and San Joaquin valleys.
Caliente.....	Kern.....	1290	64.5	111	32	8.20	0	20	259	15	91	Sea coast.
Eureka.....	Humboldt.....	64	49.8	73	30	29.85	T	112	71	152	142	Sea coast.
Point Reyes.....	Marin.....	490	51.7	87	37	15.62	T	73	124	78	163	Sea coast.
San Francisco.....	San Francisco.....	207	55.2	87	38	26.00	0	70	158	125	82	Sea coast.
Monterey.....	Monterey.....	15	54.4	88	24	25.34	0	53	276	50	39	Sea coast.
Santa Barbara.....	Santa Barbara.....	130	58.3	94	32	30.74	0	60	233	91	41	Sea coast.
San Diego.....	San Diego.....	93	60.3	93	34	11.77	0	51	225	91	40	Sea coast.
Los Angeles.....	Los Angeles.....	293	62.2	95	38	17.85	0	44	173	125	67	Southern California.
Riverside.....	Riverside.....	851	62.2	110	21	11.81	0	43	202	122	41	Southern California.
Escondido.....	Escondido.....	657	60.9	104	17	13.86	0	43	54	290	21	Southern California.
San Bernardino.....	San Bernardino.....	1234	61.1	111	17	12.41	0	31	267	68	40	Southern California.
Redlands.....	San Bernardino.....	1352	61.8	106	24	15.12	0	50	222	82	61	West of Coast Range.
Santa Rosa.....	Sonoma.....	181	54.9	96	23	29.12	0	66	198	86	81	West of Coast Range.
Mt. Tamalpais.....	Marin.....	2375	53.8	96	28	26.61	9.4	76	213	68	84	West of Coast Range.
Lick Observatory.....	Santa Clara.....	4209	50.7	89	17	34.12	42.0	65	232	53	80	West of Coast Range.
San Jose.....	Santa Clara.....	95	55.8	91	25	24.41	0	68	233	65	59	West of Coast Range.
Hollister.....	San Benito.....	284	55.2	94	22	14.68	0	57	220	78	67	West of Coast Range.
Los Gatos.....	Santa Clara.....	600	57.2	93	30	53.62	0	63	246	33	86	West of Coast Range.
Paso Robles.....	San Luis Obispo.....	800	56.7	110	13	26.98	0	50	271	36	58	West of Coast Range.
Ojai Valley.....	Ventura.....	900	59.7	110	21	29.96	0	45	255	66	44	West of Coast Range.
Palm Springs.....	Riverside.....	584	70.3	117	26	4.83	0	14	233	88	44	Southeastern California.
Calxico.....	Imperial.....	0	70.9	113	25	2.35	0	8	284	33	48	Southeastern California.
Mecca.....	Riverside.....	185	70.7	116	25	1.65	0	9	162	83	30	Southeastern California.

B. R.—Broken Record.

T.—Indicates trace of precipitation.

CLIMATE OF CALIFORNIA.

By N. P. Chipman.

The table on the preceding page is from the Annual Summary, California Section, of the Weather Bureau record for 1911. The comparative records in the article are from the Weather Bureau record for 1910, a fair average year.

California must be counted among the most valuable possessions of the United States for many reasons; chiefly, however, because of the matchless climate of the State and the high economic value it bestows upon a large area of arable land whose coast line measures 850 miles from point to point (about 1,000 miles of actual coast), the average width of the State being about 200 miles. The south boundary line of latitude emerges on the Atlantic Coast near Savannah, Georgia, and the north parallel near Boston, Massachusetts. Between these two latter points lie ten States of the Union. It accounts for something to the nation that this extended coast line, on the Pacific Ocean, is fortified by a region capable of supporting many millions of people and that the coast to the Canadian boundary is backed by a country of almost boundless resources.

It is not generally appreciated that all of France, all of Italy north of Rome, and half of Spain lie **north of the north boundary of California**. This relative position on the west coast of our continent would suggest a mild climate, but not necessarily its unique and exceptional character. It is the purpose of the writer to bring to public attention the principal features of this climate and to show its economic value.

Professor Alexander G. McAdie, District Forecaster of the United States Weather Bureau, San Francisco, states that the climate of California is controlled by four great factors: (1) The movements of the great continental and oceanic pressure areas (commonly called "high" and "low"), together with the movements of individual pressure areas; (2) the prevailing drift of the atmosphere in temperate latitudes from west to east; (3) the proximity of the Pacific Ocean, with a mean annual temperature near the coast line of 55 degrees, Fahrenheit, a great natural conservator of heat, to which is chiefly due the moderate range of temperature along the coast from San Diego even to Tatoosh Island (extreme north-west coast of Washington); and (4), the exceedingly diversified topography for a distance of 200 miles from the coast inland. To this diversified topography is due the fact that California is a land of many climates, "from the hottest subtropical to the cold temperate, and from the driest desert to the most humid regions of the higher mountains and northern coast."

The Sierra Nevada Mountains form a natural boundary line on the east, rising gradually from the west to a height of from 8,500 to 14,000 feet, much above the snow-line, and falling off to the Nevada plateau, which is about 4,000 feet above sea-level. The Coast Range Mountains form a broad belt, traversing the entire coast, and consists of two or three parallel ranges from 3,200 to 5,000 feet high, and between these ranges are many rich valleys, some of large extent. The Coast Range emerges into the Siskiyou Mountains on the north, a connecting link with the Sierra Nevada, crowned by Mount Shasta; and the Tehachapi Mountains, far to the south, form another connecting link.

Between the Sierra Nevada and the Coast Range Mountains and these connecting mountain links lies the great central valley of California, about 400 miles long and from 50 to 60 miles wide; an agricultural district of great fruitfulness, comprising quite one-ninth of the State. There is but little waste land in it. The northern portion is blessed by ample rainfall, and the southern part, when watered, is everywhere very productive, as is the entire valley. The Sacramento River runs south through the northern portion (Sacramento Valley), rising near Mount Shasta; the San Joaquin river runs north through the southern portion (San Joaquin Valley); the two rivers uniting near the middle of the great valley and flowing westward into San Francisco Bay, and thence through the "Golden Gate" into the Pacific Ocean.

There is here a wide break in the Coast Range through which the summer trade winds find their way into the interior, an important factor in the climatic conditions of the valley. The sea-breeze blows up stream, north into the Sacramento Valley and south into the San Joaquin Valley, thus tempering the heat of the great valley. This influence, together with the dryness of the atmosphere, renders the occasional high temperatures of these two valleys more easily endurable at 110 degrees than is 95 degrees in the humid regions of the Eastern States.

South of the Tehachapi Mountains the Sierra Nevada Mountains continue at less elevation, and are locally called Sierra Madre. The wonderfully developed region known as Southern California lies west. On the east is the Mojave desert, and south and east the Colorado desert; important regions of the State as yet but partially developed, but of great fertility by the application of water, which the genius and enterprise of the people are rapidly bringing in touch with the land. As in the north, the breaks in the Coast Range and in the Sierra Madre become important factors in modifying the climate of the interior. In Southern California and in Central California (San Joaquin Valley) extensive irrigation systems already in operation supply the comparative lack of rainfall. Irrigation is also being extensively developed in the Sacramento Valley.

Winds. The prevailing winds come from the ocean and are principally from the southwest landward, producing a cool summer climate along the immediate coast. Fogs sometimes sweep in from the ocean, more or less unfavorably affecting the enjoyment of the climate, but by their moisture contributing to the growth of vegetation. These fogs are less harsh on the south coast. The heat rising from the great valley draws a strong current from the trade winds through the Golden Gate that divides as it passes and extends south to the Tehachapi Mountains and north to Mount Shasta, rendering the air of the valley more delightful. The same drift of the trade winds tempers the air far into the interior in Southern California. The high mountain barrier on the east, through the length of the State, deflects the cold winds that sweep down over the Nevada plains in winter from Alaska and prevents their entrance into the valley regions of California. Dry north winds sometimes blow through the great valley in summer, raising the temperature, and are occasionally injurious to growing crops, but they seldom continue more than three or four days, when they are succeeded by the balmy and cool ocean breezes. Along the immediate coast the average winter and summer temperature differs only about four degrees, and one of the characteristic features of the San Francisco climate is exemplified by the sight of furs worn by ladies over summer garments, and fires in summer are not infrequent.

All over the Coast, however, there are thousands of sheltered nooks and small valleys and sequestered spots, where the fogs and harsh winds of the Coast have no appreciable effect and where the climate is charming and sunny to the last degree, both in winter and summer.

Rainfall. The terms "winter" and "summer," as commonly used in the Eastern States, have no application in California. The year is more properly divided into "rainy season" (winter) and "dry season" (summer). Practically all the rain falls from about the first of November until April; the remaining months of the year are rainless, except in some parts of the mountains and on the Coast north of Cape Mendocino, where occasional summer showers occur. Cereal crops mature in early summer after rain ceases, and no housing of crops is necessary for protection against rain in harvest time.

The rainfall of California is a characteristic feature of the climate. A word as to its source and cause will be interesting. Professor McAdie points out that over the North Pacific Ocean in winter there exists an area of low barometer (latitudes 40 and 60 degrees north and 130 degrees west to 140 degrees east longitude), while an area of high pressure overlies the greater part of North America with a southwest extension to the tropics and west to the one hundred and sixtieth meridian. He says: "We shall find that typical wet winters on the California coast occur when this great North Pacific 'low' extends well eastwards, overly-

ing the continent west of a line drawn from San Francisco to Calgary (Canada). At the same time the great continental high area apparently recedes to the south-east. On the other hand, the pressure distribution characteristic of a 'dry' winter on the California coast is marked by the prevalence of the continental 'high' over the entire country west of the Rocky Mountains."

Our winter rain storms (barring an occasional one coming in from the ocean unheralded) have their origin off the coast of Vancouver, and curiously enough are attended in the Sacramento Valley by south winds. The storms diminish in intensity as they travel south, tapering off as they approach Southern California.

The Weather Bureau record for 1910 showed the great variations of rainfall within the State, and even within the great valley. For example, the rainfall at Eureka, Humboldt County, on the immediate coast, was 29.65 inches, and at San Diego but 5.75 inches. At Redding, Shasta County (interior), the rainfall was 24 inches; at Red Bluff, forty miles south, 14.59 inches; at Sacramento, 7.78 inches; Fresno (center of San Joaquin Valley), 4.88; Bakersfield (extreme southern point of valley), 5.31 inches. In the Sierra Nevada Mountains the rainfall increases about one inch for every hundred feet elevation. It will be observed that the rainfall south of the Tehachapi Mountains (Southern California) is greater than at the extreme southern portion of the San Joaquin Valley.

The direction of the Coast valleys exerts striking influence upon rainfall and temperature, dependent upon the facility for the trade winds to reach them. The climatic and agricultural character of the foothills, up to 2,000 or 2,500 feet, is much the same as in the valley, although the character of the soil is different. Even higher, fine deciduous fruits are grown. Still higher are the lumbering and mining camps, and thousands of cattle and sheep are herded in summer, where in winter the mountains are deeply covered with snow. Illustrative of the characteristic variations of climate, it may be stated that in the vicinity of Summit, Placer County, elevation 7,017 feet, the temperature was 2 degrees above zero, and the snowfall for the year was 257 inches. At Rocklin, Placer County, 30 miles west, elevation 249 feet, the lowest temperature was 24 degrees above zero. All the natural ice consumed in California was made near Summit, while oranges were being gathered for market around Rocklin.

Temperature. The foregoing table shows not only temperature, but also rainfall, elevation of points above sea, clear and cloudy days. I have taken illustrative points in Northern and Central California, the Coast country and the mountains. It will be noted that while the annual mean temperature of the Pacific Coast does not differ greatly from the annual mean of the Atlantic Coast, the average summer and average winter here and on the Atlantic are wide apart, and the extremes between the highest and lowest temperature are here not very great. It is this exemption from extremes of temperature that constitutes the charm, and healthfulness as well, of the Pacific Coast.

In the interior, especially in the great valley, the seasons show greater extremes of temperature, but, as already suggested, the dryness of the air renders these extremes less felt than on the Coast, where the air is more moist. The limit of winter cold is the test of what may be grown rather than the average temperature.

And so we find citrus fruit flourishing from the north to the south end of the great valley, and orange growing is a leading industry in several counties of that valley. In Southern California both the heat and the cold are comparatively milder, although the readings of the thermometer do not much differ from the points north of the Tehachapi. It is shown by the table that there were 211 clear days in San Jose as against 194 in Los Angeles during the year, although there were twice as many rainy days in San Jose. Abundant sunshine is also found in the interior. For example, Sacramento, in the north, had 230 clear days, and Riverside, in the South, 237. In truth, the California of "sunshine, fruit and flowers" is pretty nearly the whole State, below high mountain elevations.

Climate Unchanging As far back as we have any recorded history, and behind this, embracing traditions coming through the early Mission fathers, we learn of the same equability of temperature, the same balmy atmosphere, the same luxuriance of vegetation. Our soil may require renewing by fertilization, but our climate is as constant as the sun. The conditions which have produced the result are themselves unchanging, and so must be the result.

It is Health-Giving. California is a universal sanitarium. The climate of the Coast is invigorating, stimulating and delightful, neither hot nor cold; the laborer knows no fatigue except from physical exhaustion resulting from over-taxed muscles. The brain-worker yields only to failure of mental powers. In the interior valleys, in midsummer, the temperature is higher, and there is discomfort at time while working in the harvest fields and at the desk and behind the counter. But the dryness of the air robs the thermometer of much of its terror. The sensible temperature, i. e., the temperature we in fact experience or feel in the valleys, is less irksome at 100 or 110 degrees than in regions of greater humidity of the atmosphere where the reading is from 85 to 95 degrees. Sunstroke here is unknown. It is the common experience of persons coming into almost any part of the State that they increase in weight and strength, are less troubled with nervous affections, sleep and eat well, and improve in health if ailing from any cause.

Source of Happiness. The variety of temperature and climatic conditions existing in the mountains, valleys, and on the Coast, and the celerity and ease with which our inhabitants may change their immediate surroundings, constitute one of the great charms of California life. Thousands of families residing in the valleys find their way into the mountains or to the seacoast and have most delightful camping-out experiences; and this they do in a few hours or a day or two at most, with their own conveyances. Our valleys and mountains lie so related to each other that no spot can be found devoid of scenic beauty. There is no dull monotony in the farmer's life as there is from necessity in the lives of those who reside on the great plains regions of the West, few of whom are ever permitted to enjoy the inspiring and elevating means of recreation and rest from labor which are a part of our life here.

Some Peculiarities. Degrees of latitude cut little figure in determining the readings of the thermometer, which is not at all true on the Atlantic Coast and in the West. The foregoing table tells the story from official sources for 1910 and is valuable as covering the whole distance and intermediate points, from San Diego, near the south line of the State, to Hornbrook, Siskiyou County, near the Oregon line, nearly ten degrees of latitude apart.

The fact that latitude has little to do with our climate is a remarkable feature. It is not true of Italy, for there is a great variation there between the temperature north and south. It is not true of France or elsewhere along the west coast of Europe. We believe this to be a peculiarity unique and found only on this Coast. This peculiarity is further attested by the fact that in nearly the whole length of this vast region the same fruits are grown. Within a radius of fifty miles around Oroville, which is 150 miles north of San Francisco, and 650 miles north of Los Angeles, there were nearly five hundred (500) carloads of oranges raised last year and shipped out of the State, and they ripen earlier than in the south. Elevation has much more to do with temperature than latitude, for in high altitudes we find snow. Our mountain summer climate is extremely delightful and is destined to draw many Eastern people to the numerous charming retreats in the Sierra Nevada and the Coast Range.

Economic Value. But, after all is said, it must be conceded that climate is our greatest resource because of its high economic value, as it is also our most valuable asset. The unthinking speak of climate as an attraction rather than a resource, but it is a resource because by its influence we are enabled to so marvelously diversify and increase the number of our agricultural products,

and often, too, all these products may be grown on the same body of land. It is a resource, because man's labor here can be profitably employed every day in the year; because there is no month when vegetation in some form is not growing, and because it furnishes ideal conditions for the growth of irrigated crops. There is no time in California when all nature is at rest or plant life is sleeping. In the field, orchard, garden, factory, and in the mines; on the stock-farm and in the dairy, every day is a day of productive labor. We commence shipping fresh deciduous fruits in May and there is no cessation until December. In November we begin to ship citrus fruits, and they overlap the deciduous fruits and continue, in fact, the year through.

Professor E. W. Hilgard justly sums up the matter thus: "Taken as a whole, California corresponds in its climatic features and adaptation to the Mediterranean region of Europe and Africa—a grand Riviera, with a partial background of the desert as well, where the date palm and the ostrich find a congenial home, and alluvial plains equaling in richness the famed delta of the Nile."

IRRIGATED AGRICULTURE—THE DOMINANT INDUSTRY OF CALIFORNIA.

By Samuel Fortier (Revised by Frank Adams).

California has always been considered a State of great possibilities. Her mines and her commerce and her climate and agriculture have long been the theme of inspiring pen-pictuers. With a range of climate and soil and of mountain and valley more varied than that possessed by any of her sister States, with a geographical position and commercial facilities naturally favorable to intensive development, she has ranked as the leader in the upbuilding of Western America. But while her gold and her seaports and her forests and commerce have made her position unique among the States, her future has always been considered bound up in her agriculture. Over half a century of development has shown that if this agriculture is to be the best of which the State is capable, it must be founded on irrigation, and for years the careful husbandman has, over a large portion of the State at least, made the artificial application of water to land an important part of his industry. Hence it is that any treatment of irrigation in California must consider not only what has been accomplished, but what seems possible of accomplishment in the future.

The total land area of California is approximately one hundred million acres. According to the irrigation census of 1909, 2,664,104 acres were actually irrigated in 1909. This statement, however, does not convey a trade idea of the relative importance of irrigation to agriculture in California. Professors Hilgard and Loughridge, of the University of California, estimate that only fourteen million acres, or about one-seventh of the total area, is valley agricultural land, so that the two and one-half million acres irrigated comprise more than one-sixth of the irrigable land of the State. This estimate does not include the tillable upper mesas and mountain valleys, both of which contain large areas of irrigable land. Yet this is not the whole truth. In 1909 about one-fifth of all the irrigated land in the United States was in California, and this State ranked first in the total number of irrigated farms and in the total construction cost of systems. The highest priced irrigated land in America is found in California, and in no other State has water for irrigation reached so high a value, or been as carefully and as economically used. And in no other State is there so great an area of fertile farming land for which the available supply is so large.

Irrigation, like any other development, has followed the lines of most evident financial returns. Hence the localities of least annual and summer rainfall were the first to be reclaimed by the artificial use of water. The tide of irrigation, however, has been moving steadily northward, and excepting in the sections of excessive rainfall, the necessity for irrigation, or at least the value of it where it is not a complete necessity, is almost universally recognized. While heretofore, then, irrigation has followed the line of the most evident return, in the future it will follow the available water supply.

The water supply of the State is in its streams and wells. The wells now dug and in use are chiefly in Southern California and in the Sacramento, the lower San Joaquin and the Santa Clara Valleys. Only the larger streams of the State have been measured, and without reliable data it is impossible to estimate the flow in the hundreds of smaller streams.



Artesian well near San Bernardino provides water for irrigation and domestic use

The supply in the larger streams, as measured by the United States Geological Survey, is given in the following table. These figures give in round numbers the average annual flow in acre-feet for the past four to six years:

TOTAL MEAN ANNUAL FLOW OF CALIFORNIA STREAMS IN ACRE-FEET.

Name of Stream.	Station.	Acre-feet.
San Joaquin River	Herndon	1,840,000
Tuolumne River	La Grange	2,130,000
Kings River	Sanger	2,138,000
Stanislaus River	Knight's Ferry	1,365,000
Merced River	Merced Falls	1,220,000
Kern River	Bakersfield	658,000
Kaweah River	Three Rivers	534,000
Tule River	Porterville	180,000
Salinas River	Salinas	200,000
American River	Fair Oaks (near)	3,610,000
Yuba River	Smartsville (near)	3,256,000
Feather River	Oroville	6,095,000
Cache Creek	Yolo	420,000
Stoney Creek	Fruto (near)	570,000
Sacramento River	Red Bluff (near)	10,175,000
Southern California streams		200,000
Colorado River at Yuma (one-half flow)		15,550,000
Total.....		41,866,000

Leaving out of consideration the water supply available in the creeks and smaller rivers, 42,000,000 acre-feet of water is sufficient to cover the 14,000,000 acres of agricultural land in California to depth of over 36 inches, which is ample for the growth of all crops. This vast quantity of water can never be entirely utilized in irrigation, because it cannot be fully controlled, but the statement of it shows the tremendous potentialities of California irrigated agriculture.

What California is now accomplishing by irrigation can partly be told by using as a basis the irrigation census of 1909. According to this census, 2,664,104 acres were irrigated in 1909, which was an increase of 84.3 per cent over the area irrigated in 1899. From 1902 to 1909 the increase was at the rate of about 135,000 acres per year.

Using the figures of the census of 1909 as a basis, the total cost of the irrigation systems has been \$72,445,669, or \$20.02 per acre.

From the returns made by assessors and the shipments of products out of the State it is possible to form an approximate estimate of the value of a part of the irrigated product. Of the 300,000 acres in vines and an equal area in orchards, the annual gross returns to the growers would not vary far from \$150 per acre, or \$90,000,000 in all. Then, in addition, there is alfalfa, vegetables, small fruits and other crops, the greater part of which are irrigated. The gross returns from these would increase the annual value to the extent of \$45,000,000.

It has already been stated that irrigation was first resorted to in California in those sections where a profit from irrigation was first most evident. These sections have, of course, been where the rainfall is least. In that portion of the State south of Techachapi, commonly known as Southern California, the development of irrigation was rapid, continuing with bounds until the water supply available in the streams was practically exhausted. Since then the irrigated area has been extended only by resort to pumping from wells and by endeavoring to make the water already diverted irrigate two acres where it irrigated only one acre before. The total area included within projects in various parts of the State in 1909 was 5,490,360 acres, of which about 70 per cent was actually irrigated in 1909. Outside of Southern California, the principal areas irrigated from wells and springs were located in the San Joaquin and Sacramento Valleys and in the Santa Clara Valley.

The General Summary on page 64 is a brief statement of what has been accomplished by private enterprise during less than half a century in reclaiming a portion of the irrigable lands in California. The attention of the reader has likewise been called to the natural resources in both land and water which remain undeveloped, awaiting the concerted action of industrious farmers. Notwithstanding the magnitude of this task, we believe that it can be accomplished. The same intelligence, energy and perseverance which wrested 2,600,000 acres from barren sands and low-producing grain fields can reclaim other millions of acres.

Of late years large sums of money have been expended on both the northern and southern borders of California by the United States Reclamation Service in the construction of irrigation works. When these are completed and settled they will materially increase the revenues obtained from irrigated farms and orchards.

On the southern boundary of the State, over 16,000 acres of the Yuma Project are in Imperial County, California. These, with about 14,000 acres included in the Orland Project, make a total of 30,000 acres that will be irrigated when these projects are completed. In addition, an area, whose exact acreage is not yet certain, will be watered in California by the Klamath Project, in Modoc and Siskiyou Counties.

The areas thus far developed may be divided into three general groups depending upon their geographical location. The first comprises the territory south of Tehachapi Pass which is dependent on small rivers, mountain streams, flowing wells and pumping plants for its supply of water for irrigation purposes. The second area includes that covered by the San Joaquin River and its tributaries known as the San Joaquin Valley. The third area is the drainage basin of the Sacramento River and its tributaries covering central and interior Northern California. A full description of irrigation in the Sacramento Valley is given in Bulletin 207 of the Office of Experiment Stations, U. S. Department of Agriculture, and similar reports on the San Joaquin Valley and Southern California are now being prepared by the same office.

What is most needed in this State and what we should most highly prize is an influx of industrious settlers, each possessing sufficient means to enable him to make a fair start along the line of irrigated agriculture. The opportunities open to this class are exceptionally good. All of the natural advantages essential to the success of the irrigated farm are to be found in the great central valley of California—fertile soil, good climate and an abundant water supply. Yet these natural gifts count for little when not utilized. We need the intelligent brain and the trained hand of thousands of farmers to make the best possible use of these advantages. In much of this work no large amount of capital is required. The individual, mutual company and irrigation district can reclaim an additional 2,600,000 acres in a manner similar to the successful efforts of like agencies in the past. In this connection it may be a surprise to some to learn that there are about 1,870,000 acres of rich valley land now included in California irrigation projects but not irrigated. Much of this land is for sale at reasonable prices. The water supply for a much larger area is readily accessible, and both land and water can be united under the most favorable circumstances whenever a sufficient number of citizens join to bring it about.

This dominant industry of California is in no danger of languishing for a few years to come on account of the lack of irrigation canals and storage reservoirs. The State is now filling up at the rate of about 100,000 people a year, and there is sufficient unirrigated land under canal systems to provide for this influx of settlers for the next ten years. The settlers should understand, however, that there are difficulties in the way of irrigation in California, as there are wherever irrigation is practiced. A brief review of some of these may not be out of place.

It has been stated that about 1,870,000 acres of fertile valley land are now included in irrigation projects but unirrigated. Much of this land has been cultivated for years, but it does not necessarily follow that it is ready to receive water. It may cost on an average of \$15 per acre to construct permanent farm ditches and

to prepare the surface for irrigation. Information regarding the methods of irrigation, cost of preparing the land, size and grade of farm ditches, etc., are available in a number of publications, but notably in Farmers' Bulletins 263, 373, 392, 399 and 404 of the U. S. Department of Agriculture. If the task of preparing land is attempted by settlers from the humid states without their first making every effort to avail themselves of the experience of older irrigators, partial failure, at least, will be very apt to result. And in addition to the perplexities of preparing land for irrigation, others equally trying are quite sure to be encountered in applying water to land. Most beginners use too much water. The evils of this, including the waste of valuable water and injury to crops and soil, are apt to be considerable, and every effort should be made to see that they are avoided. As the land adapted to agricultural purposes becomes settled and as the available water is appropriated, the irrigable area can only be increased by improved methods of use, making it possible to irrigate three acres with the supply now being used on two. Requirements and practice vary with localities, but in every locality there are some careful irrigators whose advice, well mixed with common sense, will help to guide the newcomer along a safe path.

Besides the practical difficulty of preparing land and applying water, the irrigator in California must give careful attention to problems of the rightful ownership and equitable distribution of water. Nature usually provides an abundant quantity of snow on the elevated ranges to supply the soil of the valleys with the requisite amount of moisture, provided that it is properly husbanded and distributed or made available for use at the proper time by storage; but the State, unfortunately, has failed to make adequate provision for determining the rights of claimants to water, or for distributing to each his equitable portion. As conditions now exist, some receive too much, while others receive too little. It is to be hoped that before long the State will do as much toward protecting the rights of irrigators as some of the other Western States have done.

EDUCATIONAL FACILITIES IN CALIFORNIA.

The educational advantages found in California are many and of a high standard. Few States have made more liberal provision for a general system of public instruction. The law requires the establishment of schools and provides for their maintenance. Appropriations amounting to over twenty million dollars are expended for this purpose each year.

It may be truthfully said that no child in California is without school privilege and no community without a school. Whenever there are fifteen children in any district a school may be established and maintained as long as an average of five is in attendance. Industrial education has grown much in favor and now has strong support in most communities. The cities maintain well equipped polytechnic high schools.

There are six normal schools conducted by the State for the professional training of teachers of the grammar grades.

Higher education in California is represented by two great universities that are classed among the leading institutions of learning in America. The University of California at Berkeley is maintained at public expense, its doors open free to all students of the State of both sexes who are qualified by preparatory training. Not less noted is the Leland Stanford, Jr., University at Palo Alto.

The State maintains a University Agricultural School at Davis, a State Polytechnic School at San Luis Obispo. One of the Normal schools, Santa Barbara, has for its special purpose the training of teachers to teach the manual arts and home economics.

Besides these public institutions there are a number of private academies, military schools, convents and religious schools and colleges of recognized merit in different parts of the State.

The opportunities for religious instruction and worship are the same as in other States. Religion has played a large part in the life of California. The Roman Catholic Church made its dramatic entry in 1769 under the early Spanish Padres; the Greek Catholic Church established itself at Fort Ross in 1811. The first Protestant Church was organized at Benicia by the Presbyterians in 1849. The first meeting house built in the State was the First Baptist church of San Francisco in the summer of 1849.

The census taken in 1906 shows a church membership of 611,464, a net increase since the census of 1900 of 330,845 or a little over 20,000 a year. Population increase, a little over 58,000 a year.

The church growth was a little more than one-third of the actual population growth from year to year.

The relative standing of religious bodies according to latest religious census is as follows:

Total Church Membership.....	611,464
Roman Catholic Membership.....	354,408, that is 58 per cent.
Protestant Membership	236,007, that is 38.6 per cent.

The leading Protestant bodies rank thus:

Name.	Numbers.	Per Cent.
Methodists	64,528	10.6
Presbyterians	37,682	6.2
Baptists	24,801	4.1
Congregationalists	23,690	3.9
Episcopalians	21,317	3.5
Christians	21,033	3.4
Lutherans	11,371	1.9
Total	204,422	33.6

SUMMARY OF VALUES

Summary of the farm, packing house, and factory values of products of California's soil and connected industries for 1911, marketed by the producer and for the most part shipped out of the State. Consumption by producers not included except in cases of animals slaughtered for consumption by rural population.

Compiled from data gathered from growers, dealers, distributors, and other authoritative sources.

Orchard Products—	Value.	Total Values.
Fresh Deciduous Fruits, including Apples.....	\$11,770,000	
Citrus Fruits	37,115,000	
Dried Fruits, not including Prunes.....	9,900,000	
Prunes	8,750,000	
Canned Fruits	10,754,200	
Olives and Olive Oil.....	3,500,000	
Nuts	4,510,000	
		\$ 86,299,200
Vineyard Products—		
Table Grapes	\$ 4,780,700	
Raisins	6,750,000	
Wine and Brandy	15,500,000	
		27,030,700
Garden Products—		
Fresh (at \$40 per ton).....	\$ 6,540,480	
Canned	6,920,000	
		13,460,480
Dairy Products	\$29,188,216	
Poultry Products	16,900,000	
Honey, Wax, etc.....	980,000	
		47,068,216
Farm Products—		
Barley	\$34,510,000	
Wheat	7,603,000	
Oats	7,140,000	
Corn, Rye, etc.....	2,750,000	
		52,003,000

SUMMARY OF VALUES

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Farm Products (Continued)—	Value.	Total Values.
Grain and Grass Hay and Alfalfa.....		42,352,000
Hops	\$ 5,500,000	
Sugar Beets (paid growers \$5,150,000)	13,050,000	18,550,000
Other Field Crops—		
Potatoes	\$ 8,748,000	
Potatoes, Sweet	360,000	
Beans	9,830,000	
Onions	2,197,000	
Seeds and sundry other.....	2,275,000	
Melon	2,250,000	
Cotton	416,000	26,526,000
Fishing Industry (Coast and Interior).....	\$ 3,600,000	
Salmon Fisheries, etc.....	7,000,000	10,600,000
Forest Products—		
Lumber, mill value.....	\$18,208,000	
Other Forest Products.....	10,625,000	28,833,000
Petroleum (for 1911) 83,872,022 barrels.....		41,872,000
Minerals—		
Gold (1911)	\$20,310,937	
Cement (1910)	7,485,715	
Conper (1910)	6,680,641	
Other Minerals (1910)	11,401,181	45,878,464
Farm Animals and Products—		
Increase (Census Report).....	\$28,744,000	
Slaughtered for market in cities.....	20,000,000	
Slaughtered in rural districts and towns.....	10,000,000	
Other animal products.....	5,500,000	64,244,000
Sundry others, not included above—		
Nursery Products	\$ 3,000,000	
Florist Products	800,000	
Fruits marketed in cities.....	9,500,000	
Vegetables marketed in cities.....	14,750,000	
Cider, Vinegar, etc.....	1,500,000	29,500,000
Total		\$ 534,217,060
Manufactures as reported by Census.....		529,761,000
Grand Total		\$1,063,978,060

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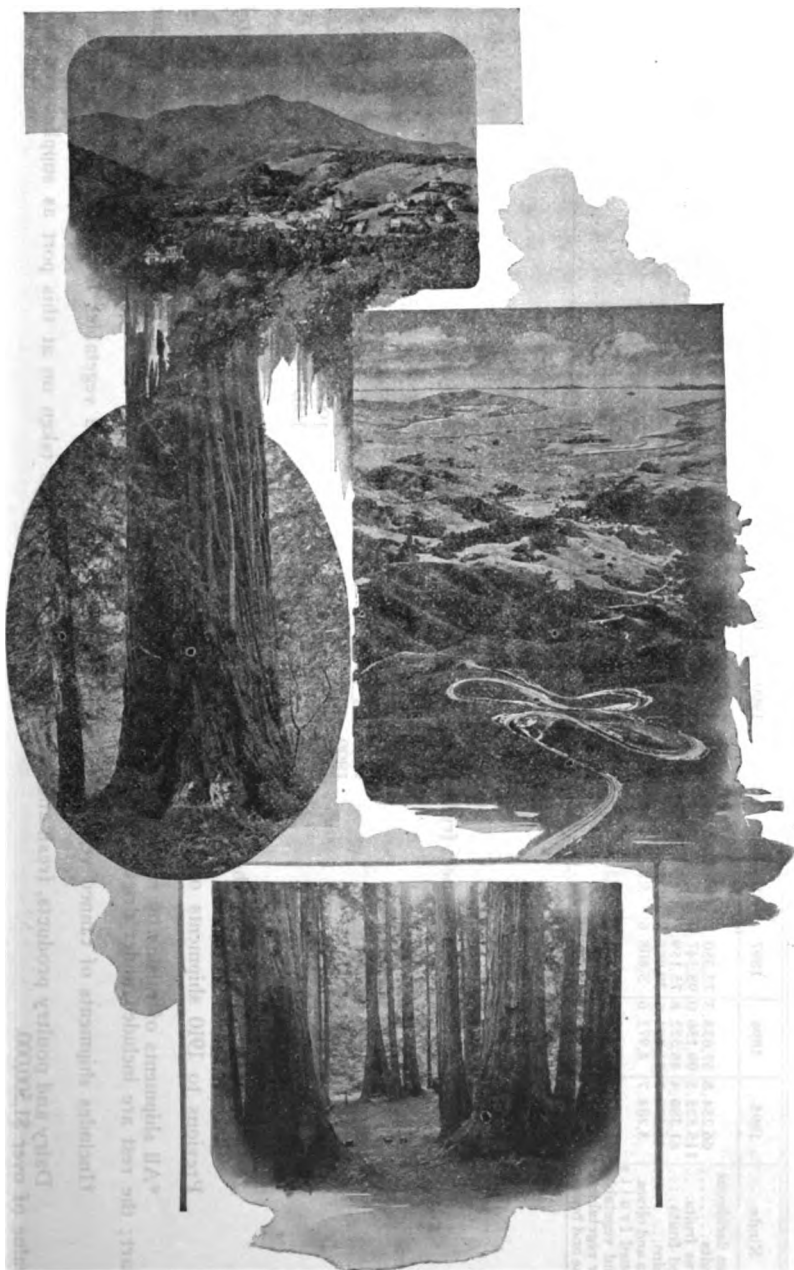
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Mount Tamalpais and Vicinity.

GENERAL SUMMARY AND COMPARATIVE TABLE OF SHIPMENTS OUT OF STATE BY RAIL, OF FRUITS, WINE, BRANDY AND VEGETABLES FOR SIXTEEN CONSECUTIVE YEARS

Tons of 2000 Pounds.

Kinds	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Green deciduous fruits.....	66,254.8	57,638.3	72,350.2	69,732.2	96,943.6	91,176.5	93,673.7	100,390.9	101,198.7	73,983.6	115,083.6	113,679.0	106,066.0	161,224.0	203,275	204,876	187,884
Citrus fruits.....	115,825.5	99,156.0	98,547.0	180,658.9	131,916.8	226,546.6	323,871.4	225,668.8	299,623.4	385,747.6	454,083.4	383,418.9	413,696.1	399,094.0	475,959	446,384	580,799
Dried fruits.....	61,386.4	48,522.8	75,159.7	76,662.7	86,925.3	90,052.8	106,987.1	151,944.5	149,531.1	156,769.3	118,479.3	112,176.9	184,821.6	133,846.0	154,756	128,892	114,483
Raisins.....	46,390.1	34,434.6	39,065.8	47,796.3	36,008.7	36,047.0	43,314.0	47,575.2	39,963.4	54,134.7	32,634.7	42,457.3	*	29,601.0	61,584	67,278	46,513
Nuts and olives.....	3,234.7	4,972.6	5,808.6	5,815.8	6,608.4	6,518.4	8,462.4	10,918.9	9,377.4	9,810.5	7,610.5	5,131.5	7,198.0	10,887.5	12,438	12,308	12,751
Canned fruits and vegetables.....	41,395.5	45,546.9	73,464.7	52,219.7	75,240.0	75,556.9	83,229.1	80,634.8	94,204.8	86,077.9	91,877.9	77,626.5	104,624.6	185,135.0	171,223	173,746	183,258
Raw vegetables.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93,500.8	86,014	78,829	130,738
Wine and brandy.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70,758.2	75,656	82,144	83,952

CARLOADS 10 TONS EACH.

Total carloads fresh and canned fruits and vegetables and wines and brandy since

1890....	16,195	1896....	38,254	1902....	77,538	1908....	98,604
1891....	23,347	1897....	48,072	1903....	88,085	1909....	120,690
1892....	25,633	1898....	56,149	1904....	92,053	1910....	109,456
1893....	40,929	1899....	55,483	1905....	99,409	1911....	116,267†
1894....	43,624	1900....	66,798	1906....	90,587		
1895....	45,257	1901....	83,732	1907....	95,299		

†The above shipments are those reported by the Southern Pacific and Santa Fe lines only. The Western Pacific made no returns.

Previous to 1910 shipments of fruits, vegetables, etc., by rail and sea were not segregated.

*All shipments of raisins by rail are included in dried fruits in 1907 and some in 1908. The 1911 raisin shipments are only reported in part; the rest are included under dried fruits.

†Includes shipments of canned vegetables. The pack of canned fruits and vegetables for 1911 is given on other pages.

Dairy and poultry products, fresh and canned fruits and vegetables taken on at this port as supplies and not included above, reach a value of over \$1,500,000.

According to the figures furnished by the railroads, there were brought into California in 1911 from other States: Dairy products (lbs.), 15,801,300; poultry, game and fish (lbs.), 7,893,000; eggs over 10,000,000 doz. This shows that there is no over-production in these lines in California.

San Diego's Panama-California Exposition in 1915

SAN DIEGO'S PANAMA-CALIFORNIA EXPOSITION was organized and incorporated in September, 1909.

The exposition will open on January 1, 1915, and it will close on December 31st. The enterprise is completely organized, with U. S. Grant, Jr., as President and D. C. Collier as Director-General. There are two funds of \$1,000,000 each from which the expenditures will be made for buildings and maintenance. The first of these funds was raised by subscriptions of stockholders of the corporation, and the second was voted in bonds for the improvement of Balboa Park, which will be the site of the Mission City in which the exposition will be held.

The exposition itself will be novel in character, comprising a distinctive exhibition of ethnological, aboriginal and archæological features peculiar to the countries included in the scope of the exposition; a comprehensive demonstration of the great reclamation and irrigation projects of the Southwest and the arid regions of Mexico; and a practical presentation of the handicrafts and industries of every section tributary to Southern California of which San Diego is the seaport destined to be the gateway of the Southwest when it shall be the first port of call in territory of the United States north of the Panama Canal and the terminal of the San Diego and Arizona Railway, closing the gap between Pacific tidewater and Yuma and connecting the transcontinental railroads with the shortest route between the Middle West and the new highway of commerce between the canal and the Orient.



FESTIVALS OF CALIFORNIA

California is famous for its carnival spirit and annual festivals are held in many of her towns which are unique and characteristic. These festivals will form an object of great interest and entertainment to visitors during 1915, making the Pacific Coast the playground of the world.

The National Orange Show is held at San Bernardino, the California Apple Annual is held at Watsonville, the Santa Cruz Water Carnival, the Gravenstein Apple Show at Sebastopol, the Poultry Show at Petaluma, the Cloverdale Citrus Fair, the State Fair at Sacramento, the Rose Carnival at Santa Rosa, the Tournament of Roses at Pasadena, Fiesta Arborea at Chico and Christmas Carols at San Francisco.



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CALIFORNIA

RESOURCES AND POSSIBILITIES



ANNUAL REPORT
CALIFORNIA DEVELOPMENT BOARD
SAN FRANCISCO, CALIFORNIA - 1913

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PANAMA-PACIFIC INTERNATIONAL EXPOSITION

SAN FRANCISCO, FEBRUARY 20 to DECEMBER 4, 1915



Great Cascade in the form of a staircase in the east or Festive Court at the Panama-Pacific International Exposition. This court will be one of the three great courts dividing the central group of Exposition palaces from north to south. The waters of the cascade, springing from a mysterious source, will flow into two great fountains. The court, representing the finest type of the architecture of the Spanish Renaissance, is designed for pageantry upon a colossal scale. Here pageants surpassing the Durbar of India will be enacted. The great tower, 270 feet high, at the northern entrance of the court, will contain a pipe organ with echo organs in the smaller towers. Mr. Louis C. Mullgardt, architect of the Fisheries building at the World's Columbian Exposition, is the designer of this court.

Liberal Arts, Manufactures and Varied Industries, Machinery, Transportation, Agriculture, Live Stock, Horticulture and Mines and Metallurgy.

Passenger transportation facilities have not been overlooked. For every trans-continental train now coming to San Francisco the railroads will then run four. Extra ships are being built by the Ocean and Coastwise Steamship Companies to cope with the volume of traffic which will flow into San Francisco bay from all ends of the world.

General Information

General Offices, Exposition Building, Pine and Battery Streets, San Francisco. Office hours 8:30 to 5:15 P. M.

Information Bureau is located on ground floor, Exposition Building. Telephone Sutter 1915.

The Director of Works, Architectural and Engineering Departments are to be found in the Service Building (on Exposition Site) Fillmore and Francisco Streets. Telephone West 6911.

CALIFORNIA INVITES YOU TO THE EXPOSITION CITY, 1915

The site chosen for the Exposition at Harbor View on the bay of San Francisco will contain approximately 625 acres with a frontage of nearly three miles on the bay.

The chief exhibit palaces, fourteen in number, will contain a combined area of 3,731,500 square feet.

The live stock exhibit will cover 25 acres.

The amusement concessions will cover 65 acres.

The Exposition in every detail is twelve to eighteen months ahead of other World's Fairs and will be ready on time.

The people of the State of California have pledged themselves to give \$17,500,000 to build the Exposition.

The 58 counties in the state will contribute another \$5,000,000.

It will be a winter to winter Exposition.

The states of the Union and the nations of the world will be represented.

The exhibits will be selective rather than general, and the test one of quality rather than quantity.

Exhibits of every character from every part of the world will be landed directly at the Exposition docks. The same facilities will be offered in the case of railway shipments, which will enable cars to be lightered from the various tidewater terminals of the railroads to the Exposition.

There will be railroad tracks about the grounds and into the buildings, and large openings will be provided in the buildings to admit the large exhibits. These arrangements will make the facilities for reaching the Exposition and the delivery of freight far superior to that of any other in the past.

The exhibits in the Exposition will be installed according to a modern classification and according to modern methods. The departments will be eleven in number and these will be Fine Arts, Education, Social Economy,

CALIFORNIA

RESOURCES AND POSSIBILITIES

TWENTY-THIRD ANNUAL REPORT

OF THE

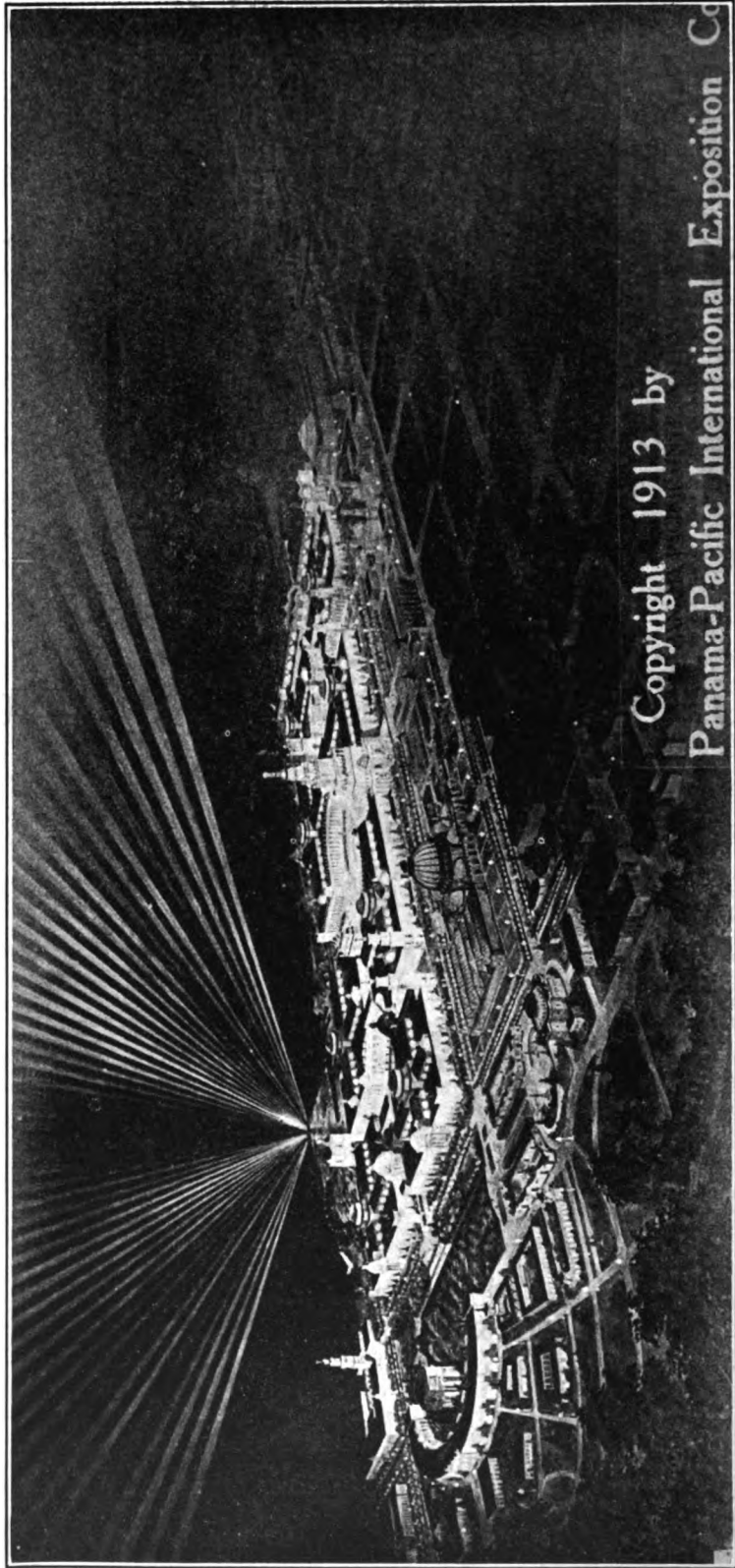
California Development Board

FOR THE YEAR 1912

Submitted as of March, 1913

PUBLISHED BY THE
CALIFORNIA DEVELOPMENT BOARD

OFFICE AND EXHIBITION HALL
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UPPER FLOOR



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Panama-Pacific International Exposition Co.

Panama-Pacific Grounds—Night Scene



State Capitol, Sacramento

TWENTY-THIRD ANNUAL REPORT OF THE CALIFORNIA DEVELOPMENT BOARD

To the Members of the Board:

The California Development Board has just completed a year of solid and substantial work. The various departments of the Board have increased in their organized efficiency and through publicity, exhibits, statistics and information and immigration departments have been zealous in supplying to the homeseeker, investor, manufacturer and tourist accurate information as to the State. The Board has made great progress during the year in realizing its true objects and functions. Though it has been called upon for many and varied services by individuals, firms and organizations, there has been a growing realization that we have a very definite work which is being emphasized. This work consists in the gathering of accurate and scientific information as to the resources and industries of the State. It is not necessarily gathered by the Board itself but is secured from counties, local organizations, state and federal officials and bureaus and from individuals. The activities of the Board for the year have been mostly directed in getting this information regarding the State. The successful termination of this campaign for the securing of information serves the following important purposes:

First. Accurate information is absolutely necessary to determine the publicity campaigns and other activities not only of this Board, but of all agencies operating to develop and advertise the State.

Second. This information is absolutely essential to intelligently answer the thousands of inquiries pouring in upon the Board from all parts of the world.

Third. It will be necessary by the 1st of January 1915 to have on hand very much greater knowledge of the intimate resources of the State than has ever been gathered together, in order to intelligently deal with the hundreds of thousands of visitors who will come to San Francisco to the Panama-Pacific Exposition.

Fourth. The coming in of the great body of immigration expected with the opening of the Panama Canal necessitates much more accurate information to properly direct the immigrant to his logical destination. A thorough knowledge of the adaptability of various foreign elements to the soil, climate and conditions of California could easily lead to a selective process of immigration.

Recognizing the importance of this matter the Board has been indefatigable in its efforts to find the proper methods, to get the proper contacts and stimulate official agencies to secure more intimate knowledge of the State. Representatives of the Board have visited repeatedly all sections of the State and are interesting county Boards of Supervisors and local organizations to supply responsible information as to their prospects and opportunities. The Board has thus laid a foundation for this important work, which will be prosecuted during the coming year with the greatest possible vigor.

Several valuable results have flowed from the Board's efforts in this direction during the past year. It has brought the Board and its representatives in very much closer contact with representative men and organizations in the interior of the State. Thus closer co-operation and co-ordination of interests has resulted which is greatly strengthening the work of the organization. Again, the efficiency of local organizations has been greatly stimulated as their efforts in the direction of getting knowledge of their own local situations tends to make them more intelligent in the prosecution of their work. Another important result which may be traced directly, is the awakening in San Francisco of a state-wide interest. The metropolis is realizing as never before the great contribution made to San Francisco by the interior and a new sympathy and recognition of common interests has been the result. The Development Board is constantly emphasizing the cardinal principle that the development of the city must depend on the development of the State.

Immigration

The Development Board has done pioneer work in preparing for the probable influx of foreigners after the opening of the Panama Canal. It is recognized that the Board will have many duties in informing the immigrant and directing him to the soil. The preliminary work of this Board in this matter, consisting of a well equipped Bureau of Immigration investigation, has given this organization a position of authority on this important question. The Governor of California appointed a State Immigration Commission during the year and your manager was made secretary of this Commission. The Board turned over its data and information upon the question to the State Commission and important legislation for the protection of the immigrant has been recommended to the current session of the Legislature. State and national contacts are constantly maintained on this subject and your Manager has conferred frequently with the Department of Commerce and Labor at Washington and participated in a national conference of State immigration commissioners held in Chicago in November, 1912. It is inevitable that this Board and its affiliated organizations will have grave duties and responsibilities when the immigrants actually arrive in California ports. The State of California will doubtless protect the immigrant from exploitation and many societies, philanthropic and racial, will doubtless assist in welcoming and educating the aliens who seek our shores. It will probably remain, however, for such organizations as the California Development Board to direct the immigrant to the soil and to give him the benefit of the best information which may be obtained.

Exhibit and Information Bureau

The exhibit rooms of the Board have been augmented by many new and impressive exhibits. Over 100,000 visitors have come to the rooms during the year, a great majority of whom were resident outside of San Francisco. The information desk in the exhibit rooms is being constantly extended with up-to-date material and a system of distribution of county and state literature is maintained. 139,862 pieces of literature were distributed over the counter averaging nearly 13,000 pieces per month. All sections of the State have splendid booklets. The Board maintains a lecture room and four lecturers have represented eighteen counties most of the year, giving stereopticon lectures hourly on the resources of the State. The Board has furnished, through its Exhibit, Information and Lecture Bureau a very splendid and vital service to the counties of the State. Efforts are being constantly made to secure larger attendance not only from visitors to San

Francisco but from San Francisco people most of whom are unaware of the presence of the most complete and scientific exhibit of its kind in existence. Many newspapers give the Board the courtesy of a free advertisement of the exhibit, viz: Bulletin, Post,

The effectiveness of the Exhibit and Information Bureau will be greatly increased as the information campaign in the State proceeds.

Publicity

Through the activities of the Board wide publicity has been given to California throughout the United States and Europe. Numerous articles on California have been furnished to the newspapers in the East and abroad and the State and the Exposition has been widely exploited through many and diverse agencies. The Board has furnished exhibits, photographs, publicity material and stereopticon slides to many organizations and newspapers. The Monthly Bulletin of the Board has been issued month by month. Four hundred and fifty thousand of these bulletins have been issued during the year and are mailed regularly to similar organizations, newspapers, publicity officials, individual members, trade organizations throughout the world, consuls of the United States in foreign countries, and libraries. In the State the Board has been represented at practically all public gatherings connected with the promotion and development work and representatives of the Board are constantly going into all sections of the State.

The Board is undertaking at this time the representation of California at the Ghent International Exposition, to be held in Belgium April 27th to November, 1913. A large exhibit has been prepared and shipped to Belgium and a representative of the Board will install this exhibit and represent the State throughout the course of the Exposition.

Expositions

The Board has kept in close touch with the plans and progress of the Panama-Pacific Exposition and also the Panama-California Exposition at San Diego, and has co-operated in every way with these important enterprises. Your President, J. N. Gillett, and your Manager, visited five eastern states and the national capitol in the interests of the Panama-Pacific Exposition in February 1912 and many other services have been rendered by our Executive Committee and the equipment of the Board. The next two or three years will be most important for the development of California and it is necessary for this Board to thoroughly equip itself to meet the great opportunities which will arise.

General Work

During the year the Board has held two meetings of the Counties Committee, one in San Jose in June where the subject of "Good Roads" was discussed. The second meeting was held in Oroville in December in connection with the Orange and Olive Exposition. Representatives from all sections of the State were present at both these meetings and they were enthusiastically successful and assisted materially in closer co-operation for the benefit of the State. The annual banquet of the Board was held in May in San Francisco and was attended by upwards of a thousand guests. The guest of honor was Hon. Philander C. Knox, Secretary of State for the United States.

The office force of the Board is constantly increasing in efficiency. Most of those serving the Board have been with the organization for many years and labor loyally and effectively for the success of the organization.

The Executive Committee has given close attention to the affairs of the Board and to matters of state-wide significance coming to their attention.

The financial condition of the Board is good and the year closes with a good balance in the treasury. The activities of the Board, however, have now reached a point when it necessitates a much larger membership and a greater financial support. The present work is carried on with the most rigid economy and a more liberal support will aid in extending efficiency.

CALIFORNIA DEVELOPMENT BOARD

GROWTH IN POPULATION AND DEVELOPMENT SINCE CALIFORNIA BECAME A STATE.

(U. S. Census Returns.)

Year	Population of State	No. farms	Average acres per farm	Average value of land and buildings per acre
1850.....	92,597	878	4,465.6	0.99
1860.....	379,994	18,716	466.4	5.58
1870.....	560,247	23,724	481.7	12.36
1880.....	864,694	35,934	461.8	15.79
1890.....	1,208,130	52,814	405.	32.53
1900.....	1,485,052	72,542	397.4	24.56
1910.....	2,377,549	88,197	316.7	51.93

Irrigation. Of the 88,197 farms in the State, 39,352, or 46.6 per cent were irrigated in 1909. The acreage reported as irrigated in 1909 was 2,664,104 acres, or 23.4 per cent of the improved land in farms. The area to which enterprises existing in 1910 were capable of supplying water was 3,619,378 acres, and the total acreage included in irrigation projects, complete or under way, in 1910 was 5,490,360 acres. A revised statement of the status of irrigation in California in 1912 is given in the Appendix.

POPULATION, NUMBER OF FARMS AND FARM ACREAGE.

Census year	Population	Farms		Land in farms		Per cent of land area in farms	Per cent of farm land improved
		Number	Per cent of increase	Acres	Improved land (acres)		
1910.....	2,377,549	88,197	21.6	27,931,444	11,389,894	28.0	40.8
1900.....	1,485,053	72,542	37.1	28,828,951	11,958,837	28.9	41.5
1890.....	1,213,398	52,894	47.2	21,427,293	12,222,839	21.5	57.0
1880.....	864,694	35,934	51.5	16,593,742	10,669,698	16.7	64.3
1870.....	560,247	23,724	26.8	11,427,105	6,218,133	11.5	54.4
1860.....	379,994	18,716	2,046.3	8,730,034	2,468,034	8.8	28.3
1850.....	92,597	872	.....	3,893,985	32,454	3.9	0.8

FARM OPERATORS.

Color and nativity	Farm operators							
	Total		Owners	Tenants	Man-agers	Per cent of total		
	Number	Per cent distribution				Owners	Tenants	Man-agers
Total.....	88,197	100.0	66,632	18,148	3,417	75.5	20.6	3.9
Native white.....	58,926	66.8	45,780	10,505	2,641	77.7	17.8	4.5
Foreign-born white....	26,193	29.7	19,914	5,565	714	76.0	21.2	2.7
Negro and other non-white.....	3,078	3.5	938	2,078	62	30.5	67.5	2.0

DENSITY OF POPULATION

In 1900, twenty States ranked ahead of California in population. In 1910, but eleven stood before her. In the ten-year period she had outstripped nine of them, taking twelfth place.

The density of population is still but 15.2 persons to the square mile.

GROWTH IN POPULATION.

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LIST OF COUNTIES AND POPULATION IN 1910 AND 1900, WITH PERCENTAGE OF INCREASE OR DECREASE—COUNTIES' PROGRESS AS TOLD BY THE CENSUS.

Counties.	1910.	Per cent of Increase, 1900-1910.
Alameda	246,131	89.0
Alpine	309	—39.2
Amador	9,086	—18.2
Butte	27,301	59.4
Calaveras	9,171	—18.1
Colusa	7,732	4.7
Contra Costa	31,674	75.4
Del Norte	2,417	0.3
El Dorado	7,492	—16.5
Fresno	75,657	99.8
Glenn	7,172	39.2
Humboldt	33,857	24.9
Imperial	13,591	....
Inyo	6,974	59.4
Kern	37,715	128.0
Kings	16,230	64.4
Lake	5,526	—8.1
Lassen	4,802	8.6
Los Angeles	504,131	196.0
Madera	8,368	31.3
Marin	25,114	59.0
Mariposa	3,956	—16.2
Mendocino	23,929	17.4
Merced	15,148	64.4
Modoc	6,191	21.9
Mono	2,843	31.6
Monterey	24,146	24.6
Napa	19,800	20.6
Nevada	14,955	—15.9
Orange	34,436	74.8
Placer	18,237	15.1
Plumas	5,259	12.9
Riverside	34,696	93.9
Sacramento	67,806	47.6
San Benito	8,041	21.2
San Bernardino	56,706	103.0
San Diego	61,665	75.8
San Francisco	416,912	21.6
San Joaquin	50,731	43.1
San Luis Obispo	19,383	16.5
San Mateo	26,585	119.8
Santa Barbara	27,738	45.4
Santa Clara	83,539	38.7
Santa Cruz	26,140	21.0
Shasta	18,920	0.9
Sierra	4,098	0.2
Siskiyou	18,800	10.9
Solano	27,559	14.5
Sonoma	48,394	25.8
Stanislaus	22,522	136.7
Sutter	6,328	7.5
Tehama	11,401	3.7
Trinity	3,301	—24.7
Tulare	35,440	93.4
Tuolumne	9,979	—10.6
Ventura	18,347	27.7
Yolo	15,926	16.9
Yuba	10,042	16.5
California	2,377,549	60.1

The Governor of the State estimated in 1911 that the increase since the census was taken, would bring the total population up to 2,500,000.

Applying the census rate of increase the population of the State may be conservatively put now at 2,750,000. Other figures may be increased by a like reasonable proportion.

CALIFORNIA DEVELOPMENT BOARD

SUMMARY OF THE STATE

	Population		Increase	Square miles	Population per square mile	
	1910	1900	Per cent		1910	10 yr. inc.
Bay counties	925,708	658,156	40.6	7,108	130.2	37.6
South of Tehachapi	751,310	304,209	146.9	45,102	16.6	9.9
Sacramento valley	153,708	114,656	34.6	10,280	14.9	3.8
San Joaquin valley	261,811	143,179	80.2	27,176	9.7	4.4
Rest of the state	285,012	264,853	7.6	66,506	4.2	.4
	2,377,549	1,485,053	60.1	156,172	15.2	5.7

This segregation shows that the greatest gain per square mile has been in the counties about San Francisco Bay, while the greatest aggregate gain and the greatest rate of increase has been south of the Tehachapi.

Of the two great interior valleys, the San Joaquin Valley has made the greatest aggregate gain, 118,632, and the greatest gain per cent, 80.2; while the Sacramento Valley made an aggregate gain of 39,042, and a gain per cent of 34.6.

The remaining counties of the State, twenty-five in number, show an aggregate gain of 20,159, and a net gain of 7.6 per cent.

Irrigation, the development of agricultural lands, and the development of bountiful oil fields of the State, have been the main factors in attracting home-seekers and investors.

POPULATION OF CITIES OVER 5,000.

	1910.	1900.
Alameda	23,383	16,464
Alhambra	5,021	.....
Bakersfield	12,727	4,836
Berkeley	40,434	13,214
Eureka	11,845	7,327
Fresno	24,892	12,470
Long Beach	17,809	2,252
Los Angeles	319,198	102,479
Marysville	5,430	3,497
Napa	5,791	4,036
Oakland	150,174	66,960
Pasadena	30,291	9,117
Petaluma	5,880	3,871
Pomona	10,207	5,526
Redlands	10,449	4,797
Richmond	6,802	.....
Riverside	15,212	7,973
Sacramento	44,696	29,282
San Bernardino	12,779	6,150
San Diego	39,578	17,700
San Francisco	416,912	342,782
San Jose	28,946	21,500
San Luis Obispo	5,157	3,021
San Rafael	5,934	3,789
Santa Ana	8,429	4,933
Santa Barbara	11,659	6,587
Santa Cruz	11,146	5,659
Santa Monica	7,847	3,057
Santa Rosa	7,817	6,673
Stockton	23,253	17,506
Vallejo	11,340	7,965
Total	1,314,037	739,513

GAIN ON THE PACIFIC SLOPE

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Class of places	Population		Increase 1900 to 1910	
	1910	1900	Number	Per cent
The state.....	2,377,549	1,485,053	892,496	60.1
Urban territory in 1910.....	1,469,739	810,193	659,546	81.4
Cities and towns of—				
100,000 inhabitants or more in 1910.....	886,284	514,008	372,276	72.4
25,000 to 100,000 inhabitants in 1910.....	183,945	90,813	93,132	102.6
2,500 to 25,000 inhabitants in 1910.....	399,510	205,372	194,138	94.5
Remainder of the state.....	907,810	674,860	232,950	34.5

THE GAIN ON THE PACIFIC SLOPE

While the gain in population for the whole of the Continental United States was 15,977,691, an increase of 21 per cent, the eleven States of the Pacific Slope, as given in the table below, show an aggregate increase of 2,734,567, an increase of 66.8 per cent.

The combined area is 1,175,742 square miles, which makes an average population per square mile of 5.8 per cent, while the average population per square mile for the Continental United States is 30.9 persons.

PACIFIC SLOPE STATES

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Montana.....	376,053	243,329	54.5	145,310	2.6	.9
Wyoming.....	145,965	92,531	56.8	97,575	1.5	.6
Colorado.....	799,024	539,700	48	103,645	7.5	2.3
New Mexico.....	327,396	195,300	67.6	122,460	2.7	1.1
Arizona.....	204,354	122,931	66.2	112,920	1.8	.7
Utah.....	373,351	276,749	34.9	82,190	4.5	1.1
Nevada.....	81,875	42,335	93.4	109,740	.8	.4
Idaho.....	325,594	161,772	101.3	84,290	3.9	2
Washington.....	1,141,990	518,103	120.4	66,880	17	9.3
Oregon.....	672,765	413,536	62.7	94,560	7.1	2.7
California.....	2,377,549	1,485,053	60.1	156,172	15.2	2.7
	16,825,916	4,091,349	66.8	1,175,742	5.8	2.4

Expansion of Agricultural Industries. The development of the agricultural resources of the State is exhibited in the following tables, comparing the acreage sown to certain crops in 1862 with those of 1910.

	1862 Agr. report acres	1910 Census report acres	
Indian corn.....	17,339	51,935	
Wheat.....	361,351	478,637	
Rye.....	1,415	7,027	
Oats.....	36,607	192,158	
Barley.....	223,217	1,195,158	
Hay and forage.....	250,464	2,049,213	
Potatoes.....	3,624	72,799	
Total.....	914,788	4,046,927	
Add acreage of following not mentioned in report 1862:			
Hops.....		8,391	
Celery.....		5,600	
Beans.....		157,825	
Standing alfalfa.....		487,134	
Cotton.....		15,000	
Sugar beets.....		101,000	
Kaffir corn, mustard seed, etc.....		50,194	825,144
			4,872,071

Besides this increase in acreage of the staple crops, California had, according to the report of the State Board of Equalization, vines and fruit trees as follows, bearing and not bearing, in 1910:

VINEYARDS

	Acres
Table grapes.....	53,729
Raisin grapes.....	128,217
Wine grapes.....	160,573

ORCHARDS

Deciduous fruits—		No. of trees	Citrus fruits—		No. of trees
Apple.....		2,143,815	Orange.....		10,803,221
Apricot.....		2,593,884	Lemon.....		1,810,616
Cherry.....		601,520	Pomelo.....		18,886
Fig.....		549,875	Lime.....		1,716
Nectarine.....		63,773			
Olive.....		1,190,452	Total.....		12,634,439
Peach.....		10,922,994			
Pear.....		1,499,932	Nuts—		
Plum.....		1,059,453	Almond.....		1,204,382
Prune.....		8,998,831	Walnut.....		891,147
Total.....		19,624,529	Total.....		2,095,529
Grand total in 1909-10.....					34,354,497

The new plantings since that, will easily bring the total deciduous and citrus fruits and nuts up to 38,000,000.

Financial Conditions in California

The following table of California banking resources is compiled from the report of State banks as of August 14th and of the national banks as of September 4:

	State.	National.	Total.
San Francisco	\$264,394,438.72	\$240,847,989.14	\$505,242,427.86
Los Angeles	123,760,000.79	80,037,174.26	203,797,175.05
Other California	287,914,129.04	179,581,562.44	467,495,691.48
Total California	\$676,068,568.55	\$400,466,725.84	\$1,176,535,294.39

State Savings and Commercial

Of the 754 banks, 523 are State—savings, commercial and trust companies. Of these San Francisco has 37, Los Angeles 38, Oakland 17, Sacramento 10, San Diego 6, Stockton 6 and the other 409 are distributed. The aggregate paid-up capital is \$61,537,742.47, surpassing many of the older States. The only ones that exceeded California in the number of depositors and the aggregate amount of deposits were Massachusetts and New York.

National Bank Statement

At the top of the following page is given the consolidated statement of the nine San Francisco national banks for the call of September 4th, the previous call and the corresponding call in 1911.

Abstract of the Condition of State Banks

At the bottom of the following page is given an abstract of the condition of 523 State banks, including sixty-three branches, as of August 14th, comprising the reports of 155 commercial banks, 131 savings banks, seven trust companies and 167 departmental banks, compared with totals as shown by the report as of June 14th.

FINANCIAL CONDITIONS IN CALIFORNIA

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Resources	June 14, 1912	Sept. 4, 1912	Sept. 1, 1911
Loans and discounts.....	\$114,238,750.62	\$119,616,132.07	\$108,207,498.70
United States bonds.....	22,551,000.00	22,801,000.00	22,383,000.00
Bonds, securities, etc.....	16,393,386.39	16,634,317.17	15,273,140.59
Premiums on United States bonds.....	323,414.44	318,726.96	470,181.61
Bank house furniture and fixtures.....	4,680,303.41	4,666,921.59	4,720,207.65
Due from banks and bankers.....	23,035,685.01	22,747,536.36	20,170,894.70
Due from reserve agents.....	16,685,698.04	17,177,775.96	15,268,309.02
Cash and cash items.....	19,922,305.94	26,946,294.50	20,569,075.55
Redemption fund (5 pct. of circulation).....	1,085,000.00	1,085,000.00	1,076,200.00
Letters of credit.....	9,176,996.82	7,879,588.97	8,669,685.95
Other assets, N. O. S.....	910,928.63	914,695.56	842,840.23
Totals.....	\$229,003,469.30	\$240,847,989.14	\$217,651,034.00
Liabilities			
Capital stock paid in.....	\$ 28,250,000.00	\$ 28,500,000.00	\$ 28,750,000.00
Surplus and undivided profits.....	20,883,584.86	21,023,781.27	20,413,194.72
Dividends unpaid.....	58,389.50	13,413.00	169,307.50
Circulation.....	21,598,207.50	21,903,807.50	21,267,820.00
Individual deposits.....	91,599,383.37	97,006,241.70	85,158,178.65
Due banks and bankers.....	55,365,640.23	62,075,826.78	51,747,285.35
Due to reserve agents.....	44,893.16	60,093.18	2,358.68
United States deposits.....	785,287.72	831,106.06	538,509.56
Letters of credit.....	9,632,125.02	8,114,652.77	8,903,187.16
City and state deposits.....	235,000.00	978,000.00	230,000.00
Other liabilities, N. O. S.....	550,957.94	341,066.88	471,192.38
Totals.....	\$229,003,469.30	\$240,847,898.14	\$217,651,034.00

Location and Class	Total Resources and Liabilities	Capital	Surplus	Undivided Profits	Individual Deposits	Number of Depositors
San Francisco—Commercial.....	\$ 62,479,165.43	\$8,468,650.00	\$1,789,728.38	\$ 754,242.65	\$ 39,894,904.94	37,222
Savings.....	194,026,784.02	5,301,600.00	8,295,534.33	1,421,962.75	177,746,387.43	253,400
Trust.....	7,888,489.27	3,725,000.00	652,949.04	279,935.41	1,242,923.41	169
Total.....	\$264,394,438.72	\$17,495,250.00	\$10,738,211.75	\$2,456,140.81	\$220,570,215.78	290,791
Los Angeles—Commercial.....	\$26,475,630.40	\$3,263,716.46	\$1,103,357.28	\$475,130.79	\$19,776,010.71	59,807
Savings.....	92,653,328.20	3,915,000.00	2,324,426.30	911,483.47	84,605,076.25	167,138
Trust.....	4,631,042.19	2,300,000.00	624,137.95	354,962.85	1,242,304.72	19
Total.....	\$123,760,000.79	\$9,478,716.46	\$4,051,921.53	\$1,741,577.11	\$105,623,391.68	226,964
Oakland—Commercial.....	\$ 7,870,889.60	\$ 942,620.00	\$749,535.56	\$195,701.81	\$4,801,421.66	14,099
Savings.....	39,643,918.47	2,110,620.00	954,039.20	380,839.47	35,287,076.24	81,610
Trust.....	337,479.75	200,000.00	50,000.00	1,327.03	86,152.72	.....
Total.....	\$47,852,287.82	\$3,253,240.00	\$1,753,574.76	\$577,868.31	\$40,174,650.62	95,709
Sacramento—Commercial.....	\$ 1,140,626.73	\$373,887.00	\$ 3,000.00	\$ 3,690.62	\$ 598,905.42	2,495
Savings.....	14,597,802.50	1,360,853.90	333,555.34	207,894.62	12,033,446.33	5,382
Trust.....	202,210.09	200,000.00	.....	1,566.29	643.87	.....
Total.....	\$15,940,639.32	\$1,934,740.90	\$336,555.34	\$213,151.46	\$12,632,995.62	7,877
San Diego—Commercial.....	\$3,948,069.04	\$562,500.00	\$117,157.10	\$48,278.55	\$2,650,502.22	5,197
Savings.....	8,161,235.55	527,500.00	311,967.51	60,202.29	7,008,861.88	19,479
Total.....	\$12,109,304.59	\$1,090,000.00	\$429,124.61	\$108,480.84	\$9,659,364.10	24,676
Stockton—Commercial.....	\$6,831,890.33	\$1,367,000.00	\$379,950.00	\$236,482.05	\$4,328,393.90	9,811
Savings.....	9,654,141.11	750,000.00	286,250.00	129,135.16	8,235,994.50	13,551
Total.....	\$16,486,031.44	\$2,117,000.00	\$666,200.00	\$365,617.21	\$12,564,388.40	23,362
State (excluding above) Commercial..	\$94,984,676.57	\$16,846,451.73	\$5,897,017.03	\$2,691,876.17	\$61,910,184.05	157,468
Savings.....	99,918,048.55	8,722,343.38	3,124,402.30	1,141,684.71	84,077,206.56	216,553
Trust.....	623,140.75	600,000.00	.....	840.38	20,372.47	.....
Total.....	\$195,525,865.87	\$26,168,795.11	\$9,021,419.33	\$3,834,401.26	\$146,007,763.08	374,021
State (as a whole) Commercial.....	\$203,730,948.10	\$31,824,825.19	\$10,039,745.35	\$4,405,402.64	\$133,960,322.90	286,099
Savings.....	458,655,258.40	22,687,917.28	15,630,174.98	4,253,202.47	408,994,049.19	757,113
Trust.....	13,682,362.05	7,025,000.00	1,327,086.99	638,631.89	4,278,397.19	188
Grand total August 14, 1912.....	\$676,068,568.55	\$61,537,742.47	\$26,997,007.32	\$9,297,237.00	\$547,232,769.28	1,043,400
Grand total June 14, 1912.....	\$666,998,510.30	\$60,675,195.33	\$26,315,612.49	\$14,758,701.59	\$532,951,777.00	1,075,774

Clearing House Exhibits

The bank clearings of San Francisco have more than doubled since 1900. Los Angeles, the other large financial center of the State, while showing a smaller aggregate, has a larger proportionate increase.

The San Francisco Clearing House was organized May, 1876. The clearings for the 8 2-3 months of that year were \$176,125,237.97.

In 1890 they were \$851,066,172.90.

In 1900 they were \$1,029,582,574.78.

In the 37 years of its existence the total amount of clearings has been \$40,-463,687,161.13. The average daily clearings increased from \$1,927,624 in 1876 to \$8,895,554.66 in 1912.

The gain in volume of clearing house business for 1912 over 1911 was 10.32 per cent, which strongly reflects the increase in the mineral and agricultural products and the increase in the amount of exports and imports over 1911, as well as the sales of real estate and the building operations of the city.

Other cities of California show an increase that indicates the marvelous development of the State in the time.

The record of advancement in the two principal cities in the past twelve years is as follows:

San Francisco.		Los Angeles.	
Year.	Clearings.	Year.	Clearings.
1900	\$1,029,582,594.78	1900	\$ 122,692,555.55
1901	1,178,169,536.30	1901	161,466,671.54
1902	1,373,362,025.31	1902	245,516,094.85
1903	1,520,200,682.07	1903	307,316,530.90
1904	1,534,631,136.73	1904	345,343,956.35
1905	1,834,549,788.51	1905	478,985,298.40
1906	1,998,400,779.06	1906	578,635,516.82
1907	2,133,882,625.80	1907	581,803,982.00
1908	1,757,151,850.08	1908	505,588,756.02
1909	1,979,872,570.06	1909	673,165,728.81
1910	2,323,772,870.99	1910	811,377,487.47
1911	2,427,075,543.46	1911	942,914,424.19
1912	2,677,561,952.27	1912	1,168,941,700.02

While the total clearings for the United States for 1912 showed an increase as compared with 1911 of but 9 per cent, San Francisco had an increase of over 10 per cent and Los Angeles of over 23 per cent. For 1912 San Francisco was eighth in the list of clearing and Los Angeles twelfth.

The transactions of the U. S. Sub-Treasury since it became a member of the San Francisco Clearing House Association, were as follows:—

In Clearings.	Out Clearings.
1910—\$ 66,983,003.69	1910—\$ 55,669,130.60
1911— 71,910,560.40	1911— 59,805,631.67
1912— 78,653,510.20	1912— 72,864,463.65
\$217,547,074.29	\$188,339,225.92

Total for three years, \$405,886,300.21.

The debit and credit balances amounted to \$125,578,485.71, of which \$33,320,000 was settled with U. S. Treasury House certificates, saving the four fold handling of that amount or 245 tons of gold coin.

Other Clearing House Cities

	1909.	1910.	1911.	1912.
Oakland	96,527,088.09	157,460,588.22	172,666,406.17	222,570,346.29
Sacramento	54,512,723.22	69,447,281.94	78,376,700.21	92,747,060.69
San Diego	52,094,521.00	66,708,874.00	82,724,333.47	131,894,087.00
Fresno	29,324,258.30	37,930,473.07	39,782,776.05	51,400,594.73
Stockton	28,195,022.20	32,277,582.58	40,356,582.58	45,064,374.68
San Jose	25,320,894.50	27,828,978.64	29,877,754.37	35,882,473.55
Pasadena	(With Los Ang.)	40,570,318.90	41,607,900.10	47,144,736.48

Bakersfield Clearing House organized in March 1912, did a business for the year of over \$21,500,000.

Federal Business in San Francisco for 1912.

Postal receipts	\$ 2,782,949.41	Internal Revenue Receipts.....	\$ 7,782,197.40
Imports	61,267,798.00	Exports	73,302,300.00
Custom receipts	6,652,146.16	Tonnage movement for fiscal year	
Postal Savings Deposits.....	1,238,814.00	ending June 30, 1912.....	6,798,726.00
		(handled over state wharves)	

The commerce of the port reached nearly every country in the world.

Commercial Movements By Sea at Other Ports in California.

	Imports	Exports
*Humboldt Bay	\$ 5,095,392	\$10,914,275
*Los Angeles	83,251,220	18,734,972
San Diego	937,655	1,401,600
*Fiscal year ending June 31, 1912.		

PROGRESS IN THE METROPOLIS

The seventh anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.

San Francisco has won the admiration and wonder of the world by the courage and energy of her rebuilding, and stands today more fit than ever to occupy her proper place among the great cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represented sixty-one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of her people has been justified and the promise of greater prosperity for the future is hers.

To this prosperity the whole State contributes and in it shares.

San Francisco can now claim to be, in character and equipment of her new structures, the most up-to-date city in the world. She is now authorized by the Federal Government to invite the nations of the world to come and see for themselves when she opens the **Panama-Pacific International Exposition** in 1915, which enterprise was inaugurated in the presence of a vast multitude in Golden Gate Park, October 14, 1911, by the turning of the first shovelful of earth by Wm. H. Taft, President of the United States.

RECONSTRUCTION OF SAN FRANCISCO

The reconstruction of the city involved vast expenditures by the municipality for streets, sewers, fire system, school houses and other municipal buildings, all of which has been of the most substantial character.

Private Construction. The buildings destroyed in San Francisco by fire of 1906 numbered 28,188 valued at \$105,000,000. The money expended by private parties for labor on the new buildings has amounted to some \$75,000,000, while the municipality has expended large sums on the same account.

The private construction as shown by the official permits issued, gives the record as follows, up to Dec. 31, 1911.

		April, 1906, to Dec. 31, 1910	1911
	Number Buildings	Cost	Cost
Class A	117	\$ 24,927,260	\$ 1,809,097
Class B	135	9,256,871	1,010,500
Class C	1,830	55,835,617	8,145,673
Frames.....	16,951	67,965,376	8,345,956
Alterations	11,280	18,897,080	1,604,248
Total	30,316	\$176,882,204	\$20,915,474
For 1911	6,079	20,915,474	
Grand total	36,395	\$197,797,678	
Add 15 per cent for under valuation		29,669,650	
		\$227,467,328	

The city shows for itself as to the character of buildings erected up to the end of 1911 and the above figures give some of the details.

For 1912 permits were issued for buildings to cost \$23,338,563.00. Contracts for the same were let and recorded as follows:—

Brick	\$14,246,796
Frame	9,826,927
Alterations	2,195,283
Total for 1912	\$26,269,006

Though San Francisco has always been famous for its hotels, it has added largely to the number and size and now has some of the finest and best equipped hostleries in the country, and can demonstrate its ability to comfortably house any number of visitors that may be drawn within her gates at any one time.

The hotels proper number over 320 with nearly 30,000 rooms, and accommodations for 60,000 guests at one time. There are also over 300 apartment houses and over 500 lodging houses, in which a large share of the floating population find shelter.

New hotels, apartment houses and lodging houses are under construction, and the number will be greatly augmented. By the time of the opening of the Panama-Pacific International Exposition, San Francisco will be in a position to sustain her prestige for care of her visitors in the face of multitudes that will be drawn to the city on that notable occasion.

The growth of building activities all over the State has been greatly stimulated by the publicity given to California by San Francisco's mishap and her reconstruction, as the following exhibit for Los Angeles, Oakland, and other leading cities of the State shows:

Valuation.		Valuation.			
Los Angeles...	{ 1905	\$15,382,057	Sacramento....	{ 1906	\$ 994,811
	{ 1909	13,260,703		{ 1909	2,063,394
	{ 1910	21,684,100		{ 1910	2,164,456
	{ 1911	23,004,185		{ 1911	3,087,392
	{ 1912	31,367,995		{ 1912	2,793,544
Oakland.....	{ 1906	4,445,692	Pasadena.....	{ 1905	1,953,532
	{ 1909	5,318,512		{ 1909	1,888,826
	{ 1910	6,695,789		{ 1910	2,133,528
	{ 1911	6,202,685		{ 1911	2,183,713
	{ 1912	9,009,734		{ 1912	2,166,352
San Diego.....	{ 1905	1,193,170	San Jose.....	{ 1905	908,525
	{ 1909	2,632,100		{ 1909	1,195,280
	{ 1910	4,005,200		{ 1910	1,750,000
	{ 1911	5,703,685		{ 1911	569,369
	{ 1912	10,001,004		{ 1912	857,166
Stockton.....	{ 1906	488,372	Fresno.....	{ 1907	129,880
	{ 1909	565,195		{ 1909	332,897
	{ 1910	506,494		{ 1910	990,040
	{ 1911	938,857		{ 1911	1,075,941
	{ 1912	1,129,170		{ 1912	1,697,294

Harbor Improvements Planned for San Francisco Bay.

The improvements to San Francisco harbor made possible by the \$2,000,000 State bond issue of 1904 have been augmented by the State bonds to the amount of \$9,000,000 authorized in 1910. At the same time \$1,000,000 bonds were voted for the acquisition of Islais Creek lands for an inland basin.

Within the next two years, or by the time of the opening of the Panama-Pacific International Exposition in 1915, these extensions and improvements will be completed, giving San Francisco a wharfage line of 44.5 miles not including Channel Creek and the three basins. A belt road connecting the piers with the transcontinental railway lines is furnishing ideal facilities for handling the commerce of the port and the present plans provide for its expansion.

San Francisco deservedly ranks as one of the Great Cities of the World. She

is a Great City by reason of her position and power in the social, commercial and financial world. San Francisco is pre-eminently a commercial city. It is a foreign and domestic market without a peer on the Pacific Coast. The city has all the advantages of location possessed by any of the great commercial centers of the world. It is situated on the north end of a peninsula, six miles wide and twenty miles long, separating San Francisco Bay from the Pacific Ocean.

As a seaport it receives the commercial drainage of a region that has the greatest variety of natural resources of any part of the earth. That drainage is the great inextinguishable, economic fact that rebuilt San Francisco after the catastrophe of 1906 on greater lines than before. It was economic pressure that forced and inspired the energies which have made a new city that is the wonder of the World.

Oakland Harbor. The great seaport of Pacific America, with constantly expanding commerce demands ever-widening facilities for handling it. Fortunately this demand is being met by San Francisco and Oakland, the two great cities of the bay region. Formerly there was danger that much of our commerce would be alienated by the lack of adequate port and dock facilities. This risk is no longer imminent. The San Francisco Harbor Commissioners, watchful of the needs of trade, are wisely expanding its facilities on the water front within their jurisdiction. But when they have done all within their power, the expansion of commerce will not stop, and to meet it Oakland is wisely and watchfully moving to develop her splendid water front to secure deep water to accommodate the largest ships and to meet commerce by water and rail facilities that will give trade a line of least resistance.

The Oakland water front is a great asset of the Pacific trade, and its improvement now planned and in progress means that the commerce of all times is to have on San Francisco Bay every advantage that natural situation justifies and that enlightened public enterprise can supply.

For that improvement Oakland has voted a bond issue of \$3,500,000, and the grantees of that city are beginning the expenditure of \$20,000,000 additional on the western and southern water front. When these improvements are completed Oakland will offer facilities which may well rank with those of Hamburg, Havre, The Hague and Liverpool.

Hereafter, then, there need be no fear that any ship, however great her tonnage or deep her draught, will fail of accommodation in this bay, or that any cargo, in or out, will lack the latest and most economical device for handling and transfer. The same spirit is upon both cities, not in rivalry, but with the determination that this seaport, intended by nature to be one of the world's greatest, shall by art and enterprise fulfill its destiny.

CALIFORNIA DEVELOPMENT BOARD

GENERAL SUMMARY AND COMPARATIVE TABLE OF SHIPMENTS OUT OF STATE BY RAIL, OF FRUITS, WINE, BRANDY AND VEGETABLES
FOR SIXTEEN CONSECUTIVE YEARS

Tons of 2000 pounds.

Kinds	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1910	1909	1911	1912
Green deciduous fruits.....	72,350.2	69,732.2	96,943.6	91,176.5	93,673.7	100,390.9	101,198.7	73,983.6	115,083.6	113,679.0	106,066.0	161,224.0	203,275	204,876	187,884	167,603.9
Citrus fruits.....	98,547.0	180,658.9	131,916.8	226,546.6	323,871.4	225,668.8	299,623.4	385,747.6	645,083.4	383,418.9	413,696.1	399,094.0	475,959	446,384	580,799	479,098.8
Dried fruits.....	75,159.7	76,662.7	86,925.3	90,052.8	106,987.1	151,944.5	149,531.1	156,769.3	118,479.3	112,176.9	184,821.6	133,846.0	154,756	128,892	114,483	194,175.2
Raisins.....	39,065.8	47,796.3	36,008.7	36,047.0	43,314.0	47,575.2	39,963.4	54,134.7	32,634.7	42,457.3	*	29,601.0	61,584	67,278	46,513	15,399.1
Nuts and olives.....	5,808.6	5,815.8	6,608.4	6,518.4	8,462.4	10,918.9	9,377.4	9,810.5	7,610.5	5,131.5	7,198.0	10,887.5	12,438	12,308	12,751	15,399.1
Canned fruits and vegetables.....	73,464.7	52,219.7	75,240.0	75,556.9	83,229.1	80,634.8	94,204.8	86,077.9	91,877.9	77,626.5	104,624.6	185,135.0	171,223	173,746	183,258	89,946.1
Raw vegetables.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	86,014	78,829	130,738	129,659.6
Wine and brandy.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70,758.2	75,656	82,144	83,952	93,249.8

The above figures for 1912 are those reported by the Southern Pacific, Santa Fe and Western Pacific lines. Previous to 1912 the figures reported were from the Southern Pacific and Santa Fe only.

CARLOADS 10 TONS EACH.

Total carloads fresh, dried and canned fruits and vegetables and wines and brandy since

1890.....	16,195	1896.....	38,254	1902.....	77,538	1908.....	98,604
1891.....	23,347	1897.....	48,072	1903.....	88,085	1909.....	120,690
1892.....	25,633	1898.....	56,149	1904.....	92,053	1910.....	109,456
1893.....	40,929	1899.....	55,483	1905.....	99,409	1911.....	116,267
1894.....	43,624	1900.....	66,798	1906.....	90,587	1912.....	116,913
1895.....	45,257	1901.....	83,732	1907.....	95,299		

Lack of uniformity in classification of some kinds of products by the several roads prevents their segregation more specially in this table. For instance "dried fruits" are made to include prunes and raisins, to comply with the economics and methods of accounts of the freight offices.

Previous to 1910 shipments of fruits, vegetables, etc. by rail and sea were not segregated.

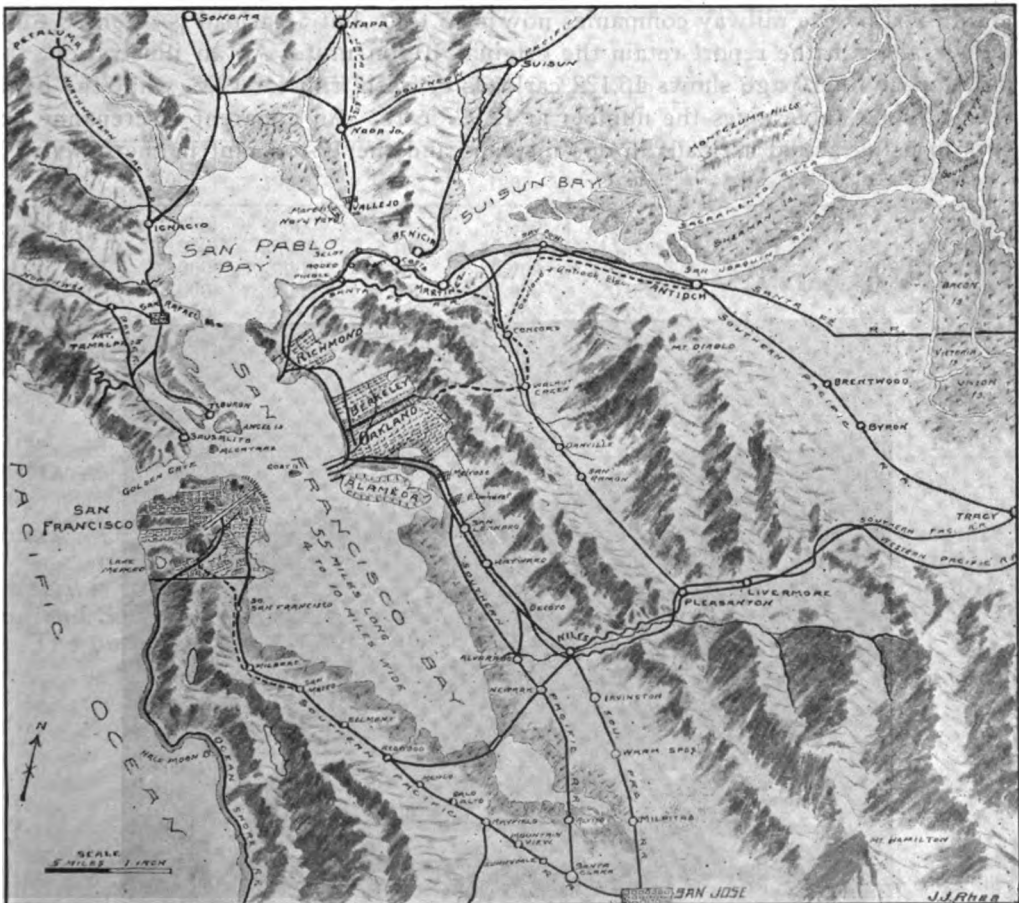
*All shipments of raisins and prunes by rail are included in dried fruits in 1907 and some in 1908. The 1911 raisin shipments are only reported in part; the rest are included under dried fruits as they are in 1912.

[†]Includes shipments of canned vegetables. The pack of canned fruits and vegetables for 1911 and 1912 is given on other pages.

Dairy and poultry products, fresh and canned fruits and vegetables taken on at this port as supplies and not included above, reach a value of about \$1,650,000.

According to figures furnished by the three railroads above mentioned there were brought into California from other states, dairy produce and eggs, 20,597,800 lbs.; dressed and live poultry, game and fish, 9,039,200 lbs., an increase of some eight million pounds over 1911. This shows that there is no over production of these commodities in California.

One road reports nearly a million pounds each of potatoes and dried peas and beans as having been brought into the State during 1912.



San Francisco Bay and Vicinity

CITRUS AND DECIDUOUS FRUITS

Citrus Fruits. The shipment of citrus fruits from California for the season November 1, 1911 to October 31, 1912 was well above the average of the last five years, but some 6000 cars short of the previous year which was the record by about that figure. 10,000 boxes went to New Zealand in October, 1911, on a rush order for the holiday trade. The crop totaled 40,176 carloads, of which 30,241 were of oranges and 5,941 of lemons went from south of Tehachapi. The balance, 3,994 carloads, went from Central and Northern California. The shipments from this section begin the first week in November and the oranges bring from \$4 to \$5 per box. These shipments were by freight and exclusive of what was marketed within the State and those shipped East by express. The development of the citrus industry in California, which now amounts to between 25,000,000 and 30,000,000 boxes, can be seen by reference to the table of shipments on another page. It is nearly three times as great as all the other states combined.

Fresh Fruit. The fruit distributing associations and others furnish statistics of shipments of deciduous fruits to Eastern markets for the year 1912, as given in the table herewith.

As the varieties are shown, they add to the value of the tables of shipments. The figures are for actual carloads without regard to tons in a car. The minimum fixed by the railway companies now is 13 tons, but a carload is often 30 tons. Other tables in the report retain the original 10-ton unit. As an illustration, the table on another page shows 16,122 carloads of fresh fruit for 1908, while the Fruit Association's table gives the number at 12,917 cars. An apparent discrepancy occurs in using actual carloads in one instance and the 10-ton unit in the other.



Variety of Climate—Oranges and Snow in Southern California.

SHIPMENTS OF CURED FRUITS

19

SHIPMENTS FROM NORTH OF TEHACHAPI

Varieties	1905	1906	1907	1908	1909	1910	1911	1912
Cherries.....	79	150	98	208½	250	250	216½	244
Apricots.....	279	16	71	231½	210	290	214½	195
Peaches.....	1946	584	699	1980½	2599	2518	2027	1621
Plums and prunes.....	1391	1220	1039	1763	1526	1552	1391	1775
Pears.....	1013	1513	1039	2701½	2638	2361	2324	3134
Grapes.....	1602	2052	3460	3816½	5880	4948	6374½	6354
*Apples.....	1761	770	1085	2216	2188	2153	.....	.....
*Miscellaneous.....	.....	.....	.....	.....	19	.....	16½	17
Total.....	8071	6305	7491	12917	15280	14072	12539	13340

*Includes Quinces, Persimmons and Figs previous to 1909 not counted separately.

While the above table includes no apple shipments for 1912, the Watsonville district reports 3331 carloads from the Pajaro Valley and adjacent region, and Sonoma County reports 645 carloads from that county. The total shipments by rail from all the State are seen on another page.

Dried Fruits. Nearly all kinds of deciduous fruits are dried for the market, but prunes, peaches and apricots are the most important. The dried output of all, except figs, varies largely according to the season, the demand of the Eastern market for fresh fruit, and the prices offered by the canners.

OUTPUT OF CURED FRUITS, INCLUDING PRUNES AND RAISINS, 1905-1912 In Tons

	1905	1906	1907	1908	1909	1910	1911	1912*
Apples.....	2,500	2,500	3,300	3,350	3,000	3,000	3,500	3,500
Apricots.....	18,000	3,000	1,100	19,000	14,000	15,250	8,800	18,500
Figs.....	3,200	3,000	4,500	2,900	4,000	3,775	5,250	5,000
Peaches.....	18,000	10,000	15,000	23,000	20,000	25,000	13,000	27,000
Prunes.....	31,250	92,500	53,000	28,500	75,000	40,000	88,000	97,000
Raisins.....	45,000	50,000	75,000	65,000	70,000	62,500	67,500	85,000
Various other, Pears, Plums, etc.,.....	2,750	2,700	1,200	3,000	2,500	1,750	1,750	3,000
Total tons..	120,700	163,700	153,100	144,750	188,500	151,275	187,800	239,000

* 1912 (Approximate).

Prunes. Of dried fruits, prunes come next in importance to raisins. Prunes are grown in many counties throughout the State; the largest center of this industry is the Santa Clara Valley. A good many prunes are grown in the San Joaquin and Sacramento Valleys and also in Contra Costa and Sonoma Counties. The output varies largely in different years.

CALIFORNIA PRUNE OUTPUT

Year	Tons	Year	Tons
1898.....	45,210	1906.....	92,500
1899.....	56,863	1907.....	53,000
1900.....	87,000	1908.....	28,500
1901.....	40,800	1909.....	77,500
1902.....	98,500	1910.....	45,000
1903.....	82,500	1911.....	88,000
1904.....	67,500	1912.....	97,000
1905.....	31,250		



Interior of Cannery
By Courtesy San Jose Chamber of Commerce.

Exports and Imports of Dried Fruits. The following exhibit is of some interest in this connection as showing the trend of trade in dried fruits.

(Compiled by George Robertson, Fresno, Cal.)

EXPORTS AND IMPORTS OF CALIFORNIA RAISINS AND OTHER CURED FRUITS AND ORANGES

RAISINS (Pounds)			EXPORTS (Pounds)			
Year	Export	Import	Apricots	Peaches	Prunes	Oranges (Boxes)
1905.....	3,978,645	11,511,347	13,616,010	700,902	34,820,748	.....
1906.....	9,749,690	4,537,648	3,268,457	1,819,863	31,777,704	.....
1907.....	4,720,606	9,927,771	1,540,471	1,354,317	37,674,800	.....
1908.....	7,084,178	4,875,693	14,463,948	1,296,095	18,087,319	714,365
1909.....	8,363,845	5,219,649	13,644,135	2,843,968	83,128,101	952,869
1910.....	15,547,074	3,022,918	18,366,055	4,946,406	64,470,370	962,229
1911.....	20,052,711	3,554,794	12,194,491	6,406,822	67,679,170	1,265,000
1912.....	19,949,046	3,255,861	13,413,430	4,425,803	74,328,074	1,197,363

California's export of cured fruits, especially prunes and raisins, is steadily increasing, while the importations are falling off. The quantity of fruit exported depends to a certain extent on the size of the crop.

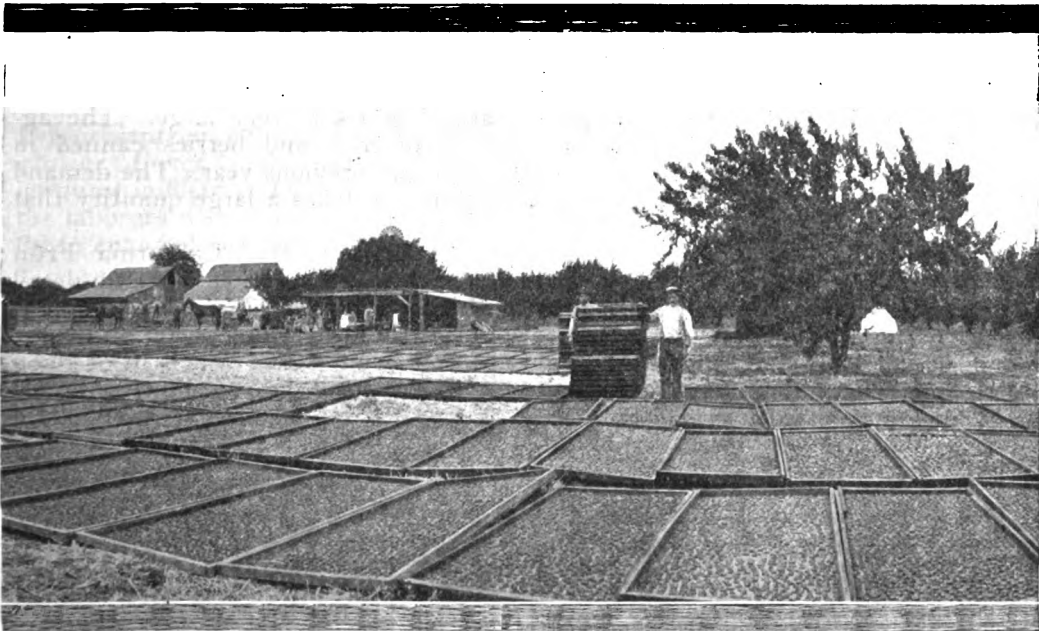
EXPORTS BY SEA 1912

Product.	Value	Shipped mostly to
Canned Fruits	\$5,447,798	England
Fruit in Glass.....	77,493	New York & England
Canned Vegetables.....	1,587,166	New York & Canada
Pickles & Sauces.....	130,253	Oceanica & Hawaiian Is.
Canned Milk.....	280,325	Hawaiian Is. & Philippine Is.
Canned Meats.....	410,109	Alaska & Philippine Is.
Beans & Dried Peas.....	1,180,482	Alaska & New York
Dried Apples.....	98,583	New Zealand
Dried Apricots.....	1,100,266	Germany, Oceanica, Canada & New York
Dried Peaches.....	340,334	Germany, Canada & New York
Dried Prunes.....	2,719,692	Germany, Canada, Netherlands & New York
Dried Raisins.....	1,246,485	New York, England, New Zealand & Phil. Is.
*Other Dried Fruit	427,096	Germany, England & New York
Nuts	241,483	New York & Hawaiian Islands
Apricot Kernels.....	123,483	Germany & Netherlands

*(These do not include shipments for consumption "en voyage.")

It is worthy of note that Canada and Australasia are about our best customers for dried fruits and raisins, Germany only exceeding them in dried fruits.

The above will give some idea of the distribution of California products in addition to the rail shipments to New York where many orders from abroad are filled.



*Drying Apricots, San Benito County
By Courtesy of "Sunset" Magazine.*

FRESH FRUITS AND VEGETABLES

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

Fresh Vegetables

Besides supplying the home markets abundantly the shipments of fresh vegetables to the Eastern markets in 1911 and 1912, amounted to some 130 tons, and are increasing year by year.

The principal kinds and the districts from which they go are as follows:

Asparagus.....Delta Region, Los Angeles, Alameda
 Cabbage.....Los Angeles, San Francisco, San Jose
 Cauliflower....Los Angeles, San Francisco and Alameda
 Celery.....Los Angeles, San Francisco, Stockton
 Melons.....Los Angeles, Stockton
 Potatoes.....Los Angeles, San Francisco and Alameda
 Tomatoes.....Los Angeles, Delta Region, Alameda
 Onions.....San Jose, San Francisco, Delta Region and other points
 Artichokes....Los Angeles, San Jose and other points
 Lettuce.....Los Angeles, San Jose and other points
 Rhubarb.....Alameda, Sacramento Valley, San Joaquin Valley and Central California

Shipments of melons, etc., from Imperial County and celery, etc., from Orange County are included in Los Angeles territory.

The "Delta Region" includes all the country of the lower Sacramento and San Joaquin rivers.

Shipments from North of Bay Counties by rail are included in those from San Francisco.

By potatoes is meant only the shipments of early potatoes.

In 1912 the total shipments out of the State of cantaloupes was between 3,000 and 3,500 carloads.

Canning Industry. The canning of fruit and vegetables is an important industry in California and the yearly output of canned goods is very large. The aggregate number of cases of all kinds of fruit and berries canned in 1912 and the vegetable output was larger than for any previous year. The demand for fresh fruit and vegetables at home and for shipping, takes a large quantity that would otherwise go to the canner.

The following exhibit from various publications, viz: the "California Fruit Grower," "Western Packer and Canner," etc., is made of the various kinds in detail of California fruits and vegetables canned in 1910, 1911 and 1912.

By permission we here give a summary of the California canned fruit and vegetable pack for 1910-11-12, and of the total California fruit packs, which is of itself very interesting and instructive. The pineapples are packed by California enterprise but are exported from Hawaii.

CANNED FRUITS—Cases.

	1910*	1911*	1912* (Est.)	Production During Last Twelve Years	
				Year	Cases
Apples.....	76,830	65,000	106,956		
Apricots.....	743,160	904,000	634,405		
Blackberries.....	62,025	77,000	120,810		
Cherries, Royal Anne.....	136,290	110,000	235,094	1901	2,677,082
Cherries, Black.....	19,620			1902	2,252,790
Cherries, White.....	40,285			1903	2,783,504
Grapes.....	45,645	70,000	45,038	1904	2,840,614
Loganberries.....	12,639	20,000	19,924	1905	3,283,296
Pears.....	619,355	620,000	704,782	1906	3,109,225
Peaches, Free.....	748,825	730,000	859,145	1907	2,982,985
Peaches, Cling.....	1,396,625	1,350,000	1,300,687	1908	4,734,663
Peaches, W. H.....			28,058	1909	3,047,001
Plums.....	80,360	165,000	142,790	1910	4,008,549
Raspberries.....	10,126	3,000	10,596	1911	4,182,650
Strawberries.....	14,073	7,000	14,548	1912	4,248,051
Other Fruits.....	3,390	5,000	25,218		
Pineapples.....		750,000	1,000,000		
Total Fruits.....	4,009,248	4,300,000	4,248,051		

*Pie Fruits were included.

CALIFORNIA RAISIN CROP

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From the "California Fruit Grower" and "Western Packer and Canner" the following exhibit shows the kinds of vegetables canned in 1910-11-12:

CANNED VEGETABLES—Cases.

	1910	1911	1912
Tomatoes.....	1,350,310	1,500,000	1,574,444
Peas.....	167,775	185,000	272,070
Asparagus.....	617,275	700,000	750,000
Spinach.....			17,082
Squash.....			20,520
Beans and Other Vegetables.....	115,285	130,000	72,459
Total Vegetables.....	2,250,645	2,515,000	2,706,575

The pack of canned vegetables for the years 1910 and 1911 was: Cases, 1910, 2,250,645; 1911, 2,516,655, of which the tomato pack leads. Canned asparagus comes next with 50,000 more cases than in 1911.

Canning of fresh vegetables is carried on at various points where there is an ample supply grown.

Asparagus is mainly canned in the Sacramento district, San Jose and Orange Counties.

Peas mostly in Southern California.

Tomatoes in Southern California, Santa Clara Valley and Sacramento Valley.

The Vineyard. California is the most important factor in viticulture in the United States. It has over 90,000,000 vines, more than all the other States. It represents an investment of \$150,000,000 which returns an annual income to the grower of over \$15,000,000. Over 60,000 people are dependent upon California's viticultural industry. This includes our 10,000 grape growers, 600 wine makers, and the laborers who do the picking and hauling, those employed in the wineries and those engaged in handling the wine for distribution.

According to the 1910 report of the State Board of Equalization, nearly 350,000 acres are devoted to grape growing. Of this, 275,000 acres are in full bearing. 36,000 acres are devoted to table grapes; 109,000 to raisin grapes and 130,000 to wine grapes.

The shipments of table grapes out of the State by rail for 1912 amounted to 6,354 carloads.

Raisins. The center of the raisin industry is in Fresno County, although raisins are produced in other parts of the State. The crop varies from year to year, as the appended table shows; that for 1910 exceeds the average of the six preceding years:

CALIFORNIA RAISIN CROP

Year.	Tons.	Year.	Tons.
1897.....	46,852	1905.....	43,750
1898.....	40,365	1906.....	47,500
1899.....	35,784	1907.....	60,000
1900.....	47,167	1908.....	60,000
1901.....	37,125	1909.....	70,000
1902.....	54,375	1910.....	56,000
1903.....	60,000	1911.....	67,500
1904.....	37,500	1912.....	85,000

The above figures show that Fresno County now produces about 60 per cent of the California raisin crop, and nearly twice the quantity produced by Spain, which produces from 15,000 to 30,000 tons and has held the lead for centuries. It was in 1892 that the California raisin crop first equaled that of Spain, and it has been increasing the difference ever since.

Seeded Raisins

Fresno County is the center of the seeded raisin industry, where it originated. The following figures show the wonderful increase in this popular form of raisins during the last fifteen years:

Year.	Tons.	Year.	Tons.
1896	700	1905	21,000
1897	3,500	1906	24,000
1898	7,000	1907	26,000
1899	12,000	1908	24,000
1900	14,000	1909	28,000
1901	14,000	1910	31,500
1902	16,000	1911	33,000
1903	18,000	1912	35,500
1904	18,000		

(The above are only approximate figures.)

COUNTIES WHERE CALIFORNIA RAISINS ARE PRODUCED

County.	Crop of 1909—pounds.
Fresno	84,000,000
Tulare	20,000,000
Kings	18,000,000
Sutter	4,000,000
San Bernardino	3,600,000
San Diego	3,200,000
Madera	2,400,000
Yolo	2,000,000
Kern	1,100,000
Colusa	800,000
Los Angeles	300,000
Total crop	140,000,000

WINE AND BRANDY.

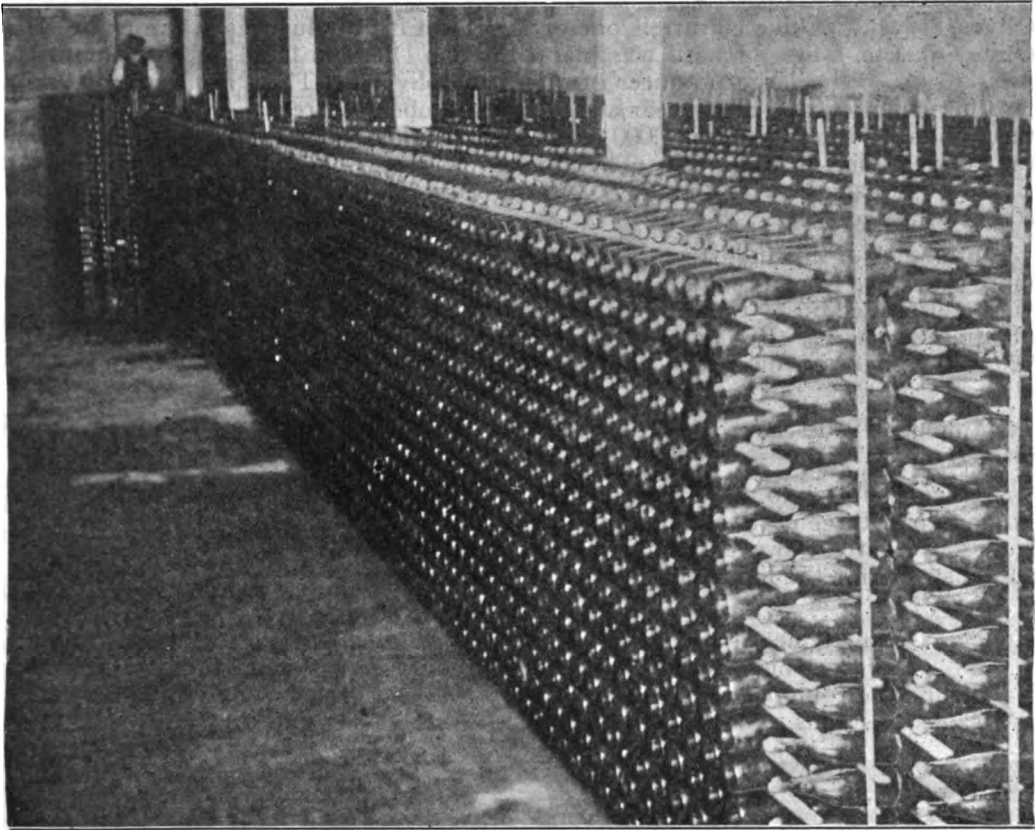
Wine and Brandy. During the past ten years the manufacture of California wines has more than doubled, as shown by the following table. The yield for 1911 was about 49,280,000 gallons. The production of sweet wines was the greatest in the history of the industry, viz: 23,280,044.48 gallons, while the dry wine output totaled about 26,000,000 gallons.

WINE AND BRANDY PRODUCTION 1897-1912

Year	Dry Wines Gals.	Sweet Wines Gals.	Brandy Gals.
1897	28,736,400	5,197,500	1,442,468
1898	10,750,000	7,779,000	1,250,000
1899	15,103,000	8,330,000	1,699,035
1900	16,737,260	6,940,300	3,256,513
1901	16,473,731	6,270,300	1,688,482
1902	28,224,146	14,835,146	4,564,173
1903	21,900,500	12,670,356	1,972,000
1904	15,589,342	13,571,856	4,420,839
1905	20,000,000	10,700,000	1,250,000
1906	26,000,000	15,000,000	1,345,000
1907	27,500,500	15,500,000	1,500,000
1908	22,500,000	14,750,000	1,750,000
1909	27,000,000	18,000,000	2,000,000
1910	27,500,000	18,000,000	2,500,000
1911	26,000,000	23,280,044	2,000,000
1912 (estimated)	22,500,000	17,797,781	1,799,539

California wines have a wide and growing market. The railroad shipments, on another page, go mainly to Eastern points, while those by sea go to the four quarters of the world.

In this connection the following is of interest:

*Champagne Cellar near Asti*

EXPORT OF WINE BY SEA

Year	Cases	Gallons	Value	Number of Countries Receiving
1908.....		4,250,799	\$1,657,089	12
1909.....		7,440,294	2,386,111	23
1910.....		9,866,539	3,162,600	26
1911.....	11,535	15,125,375	4,910,138	32
1912.....	11,388	13,238,223	4,537,753	33

The commercial brandy production of California during 1911 passed the 2,000,000 mark, while the brandy manufactured for the fortification of sweet wines was 6,100,521.31 gallons.

The shipments of wine out of California by rail during 1912 were about 19,600,000 gallons, while the exports by sea amounted to 11,388 cases and 13,238,223 gallons, valued at \$4,537,753. To this must be added the brandy exported, which was 1,024 cases and 67,122 gallons, valued at \$72,841. Thirty-three countries, besides the United States, received this wine.

The output of champagne naturally fermented in bottles for 1912 was about 750,000 bottles, or near 74,000 cases. This new industry will be greatly extended the coming season.

Three manufactories are at present engaged in making this champagne. Nearly 300,000 cases will be ready for the Exposition visitors in 1915.

Olives, Olive Oil, Etc. Olive culture is one of the oldest fruit industries in the State. The first orchard was planted in San Diego in 1769, and that county is a large producer of olives and olive oil. There are large orchards in other counties, and every year adds to the number of trees. There are thirty-three counties reporting over 1,000 trees each, ranging from Shasta on the north to the Mexican line on the south. The number of trees, as reported by the State Board of Equalization, is about 1,002,000 in bearing. Los Angeles leads with 320,800 bearing trees.

Statistics of this industry are difficult to obtain. This industry is becoming more attractive from a remunerative point of view, and the removal of competition with adulterated oil by the Pure Food regulations has given quite an impetus to planting new trees. Estimates of the production for 1912 range from 750,000 to 920,000 gallons of olive oil, and from 1,000,000 to 1,200,000 gallons of pickled olives.

Imports 1910-11 were 4,500,000 gallons of oil and over 3,000,000 gallons of pickled olives.

Uncertainty as to tariff changes on olive importations and other causes have in the two or three years induced some olive growers to turn their attention to other fruits. Recently, however, the new planting has been large in some more favorable districts for the industry.

Honey. While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the San Joaquin Valley and the counties south. The crop for 1909 was the record crop and many thousands of stands of bees are sent from other states to winter in California.



*Gathering Almonds near Lodi
By Courtesy of "Sunset" Magazine.*

According to figures furnished by the State Bee-Keepers Association there are about 588,000 colonies of bees in the State with an average of 70 pounds of honey a year, valued at 6 cents a pound.

The estimates of the honey product for several years are:

Year.	Pounds.	Year.	Pounds.
1899	2,822,000	1906	5,250,000
1900	2,208,000	1907	8,700,000
1901	8,112,000	1908	5,250,000
1902	5,125,000	1909	11,532,000
1903	8,400,000	1910	5,500,000
1904	7,000,000	1911	9,500,000
1905	9,500,000	1912	4,710,000

Silk. The raising of silk worms which attracts some attention, is increasing slowly in California and though not yet on a commercial basis, it is likely to become a good industry. The climate in California is admitted to be adapted to the raising of silk. The season for production extends over a period of six to eight months, while in Europe it lasts only as many weeks.

Nuts. The production of almonds fluctuates greatly and the crop for 1912 equalled that of 1908, which was the record. The production of walnuts is more regular, and the crop for the year though less than that of 1911 was above the average and gave good returns.

ALMONDS AND WALNUTS

Year	Almonds Tons (2,000 lbs.)	Walnuts	Year	Almonds Tons (2,000 lbs.)	Walnuts
1895.....	825	2,310	1904.....	800	7,590
1896.....	1,605	4,115	1905.....	2,125	5,750
1897.....	2,375	3,985	1906.....	900	6,125
1898.....	450	5,650	1907.....	750	8,250
1899.....	2,320	5,530	1908.....	3,000	8,000
1900.....	2,740	5,430	1909.....	1,650	7,500
1901.....	1,560	6,910	1910.....	2,750	8,500
1902.....	3,270	8,520	1911.....	1,700	12,000
1903.....	3,200	5,500	1912.....	3,000	9,250

ALMONDS AND WALNUTS.

At an average value of \$300 per ton, the aggregate of these crops is \$4,110,000.

The average production of **walnuts** in California for the past fifteen years was about 7,668 tons.

The average importations for last eight years about 13,471 tons.

The average production of **almonds** for fifteen years in California was 1,982 tons.

The quantity of almonds grown in California is so small, compared with the importations that prices vary according as the latter are light or heavy.

DAIRY INDUSTRY.

The dairy industry is year by year more extended and important. Comparative statistics of butter production of the State for a series of years beginning

with 1896 show the growth of the industry, and yet the supply falls so far short of the demand as to necessitate the bringing in of large quantities of butter from other States. At the same time large quantities of butter go East on special order from those who have tasted California creamery butter.

The season, as covered by the report of the State Dairy Bureau, ends September 30th of each year.

Despite the persistent efforts of that bureau some creameries and large producers in a number of counties failed to make report of their production for the year 1911.

Scientific Dairying. Scientific dairying has almost wholly superseded the old methods in California, as the following table, showing the number of pounds of butter produced in the State by the creamery method and the old method for seven years ending October 1, 1902, demonstrates:

Year	Creamery Method	Old method	Totals
1896.....	10,097,323	21,508,117	31,605,440
1897.....	10,866,646	17,811,793	28,678,439
1898.....	10,410,479	13,280,549	23,691,028
1899.....	12,725,814	12,143,270	24,869,084
1900.....	16,486,695	12,296,164	28,782,859
1901.....	19,017,512	10,713,370	29,730,882
1902.....	21,593,021	9,935,741	31,528,763

Since 1902 the growth is indicated in the following exhibit:

Year.	Pounds.
1903.....	34,676,311
1904.....	35,636,909
1905.....	41,961,047
1906.....	44,044,578
1907.....	44,599,211
1908.....	48,469,585
1909.....	49,595,869
1910.....	45,819,741
1911 (Reported by State Dairy Bureau).....	50,380,736
1912 " " " " " ".....	54,940,886

California is now well to the front as a dairy State. The production of butter for 1912 is the largest in the history of the industry. The increase is mostly in counties where irrigation is practiced.

IRRIGATION AND DAIRYING.

As showing the effect of irrigation on the dairy interests the following exhibit from the reports of the State Dairy Bureau, giving the product of butter in pounds by principal counties, in which irrigation is practiced, is instructive:

Counties	1907	1908	1909	1910	1911	1912
Fresno.....	2,786,817	3,315,926	3,721,262	3,290,825	3,803,644	4,144,404
Kern.....	372,569	521,495	545,900	565,900	693,413	732,059
Kings.....	1,960,364	2,419,651	3,432,879	3,218,036	3,552,542	3,069,881
Merced.....	2,469,726	2,831,846	1,396,865	2,510,269	3,102,222	1,351,049
Sacramento.....	1,060,098	1,277,771	1,592,138	1,102,012	1,405,054	1,900,417
San Joaquin.....	1,625,538	1,605,152	2,350,000	1,425,543	941,430	1,336,344
Stanislaus.....	3,615,469	4,113,866	4,155,701	*4,363,296	5,166,515	6,894,225
Tulare.....	2,522,707	2,729,377	2,307,238	3,072,198	3,955,583	3,947,284
Yolo.....	726,532	944,268	807,787	1,103,114	1,096,718	1,104,509
Imperial.....		1,165,763	1,677,640	1,948,941	2,885,941	4,110,736
Totals.....	17,139,820	20,925,115	21,987,410	22,599,903	26,603,062	30,590,908
Humboldt (non-irrig.)...	4,390,815	4,495,041	4,715,998	4,790,280	5,238,382	5,095,014

Imperial is entirely dependent on irrigation, and its butter production, since its formation in 1908, has grown nearly four-fold as the above shows.

Evaporated milk was produced in the following counties; in 1911:

Humboldt	3,233,906 pounds	Marin	336,000 pounds
San Benito	4,914,404 pounds	Sonoma	336,000 pounds

While irrigation has been a most important factor in the increase of butter production, as shown above, Humboldt County, with its abundant rainfall rendering irrigation unnecessary, claims the position of the second county of the State in dairy products, as shown by the tables, and second in butter production.

SHIPMENTS OF DAIRY PRODUCTS FROM HUMBOLDT COUNTY, 1912.

(From records of the Humboldt Chamber of Commerce.)

Article.	Weight, lbs.	Value.
Butter	5,112,960	\$1,558,235
Cheese	162,820	26,050
Condensed Milk and Cream	2,791,010	218,665
Dry Milk	1,027,340	135,070
Fresh Cream and Milk and Buttermilk	136,490	4,170
Casein	1,497,870	89,870
Totals .	10,728,490	\$2,032,060

There is annually consumed within Humboldt County, of home produced butter, some 1,500,000 lbs. and a small percentage of cheese, condensed milk and dry milk.

A comparatively new branch of the dairy industry is the production of commercial casein. It is now produced extensively in the northern counties of the State. It is used as a sizing in making high-grades of paper, also for piano keys, billiard balls, and everywhere that ivory can be used.

Humboldt County in 1911 produced 1,953,500 lbs. of casein and Del Norte County produced 120,000 lbs. In 1912 Humboldt produced 1,497,870 lbs.



Holstein Dairy Herd, Sacramento Valley. (Courtesy of "Sunset" Magazine)

CHEESE PRODUCTION.

Although the State has nearly doubled in butter production in ten years ending 1910, the cheese production has not kept pace therewith. The cheese produced and reported to the State Dairy Bureau is, with a few exceptions, only that made by the ordinary Cheddar process. There is a considerable amount of fancy and hand made cheese which has not been reported. Out of the fifty-eight counties in the State, twenty-five produced cheese during the year. Monterey, Marin, Santa Clara, San Benito and Merced, in the order named, are the leading counties. Comparing the totals for the past fifteen years we have the following:

Year.	Pounds.	Year.	Pounds.
1897	6,399,625	1905	6,020,672
1898	5,148,372	1906	6,418,480
1899	5,294,938	1907	5,928,942
1900	4,989,960	1908	6,162,514
1901	5,681,366	1909	5,931,194
1902	6,503,441	1910	4,648,348
1903	7,218,639	1911	4,580,495
1904	6,133,898	1912	4,785,617

Large quantities of butter and cheese continue to come from the East, notwithstanding the superior advantages presented in this State for enlarging this branch of farming and for creamery development. It is interesting to note that 11,758,680 pounds of cheese, more than double the amount manufactured in this State, is received in the San Francisco market alone. All we need is more good cheese factories and 500 or 1,000 families to produce the milk.

The following are the monthly receipts of **butter** and prices therefor in San Francisco for the two years ending September 30, 1912:

1910-1911.	Pounds.	Price.	1911-1912.	Pounds.	Price.
October	702,900	34.53	October	1,946,800	30.68
November	968,600	35.12	November	1,300,350	31.39
December	731,400	35.03	December	1,114,900	33.03
January	1,036,000	32.08	January	1,236,400	35.38
February	1,296,100	30.16	February	1,723,400	34.60
March	1,553,500	26.86	March	1,645,900	31.42
April	2,190,500	21.60	April	2,183,600	27.71
May	3,088,800	22.73	May	2,883,600	25.29
June	2,036,600	21.92	June	2,309,400	27.60
July	1,873,400	23.10	July	2,620,400	27.82
August	2,009,100	25.75	August	2,626,400	31.31
September	1,546,700	26.82	September	1,957,700	33.08
Total	19,033,600	28.00	Total	23,548,850	30.77

The following are the monthly receipts of **cheese** and prices therefor in San Francisco for the two years ending September 30, 1912:

1910-1911.	Pounds.	Price.	1911-1912.	Pounds.	Price.
October	603,900	16.68	October	728,080	14.57
November	704,000	16.48	November	619,500	16.50
December	551,900	16.66	December	496,400	15.96
January	637,000	16.64	January	594,500	16.15
February	645,500	15.95	February	780,200	16.42
March	610,000	12.91	March	552,900	18.85
April	626,000	12.52	April	987,800	16.92
May	1,057,300	12.44	May	1,762,200	13.59
June	1,047,200	12.03	June	1,584,600	13.69
July	1,047,900	13.01	July	1,391,400	14.12
August	1,601,200	14.00	August	1,504,200	14.04
September	500,300	14.17	September	756,900	14.65
Total	9,632,200	14.50	Total	11,758,680	15.46

ANNUAL VALUE OF DAIRY PRODUCTS.

1911.

Butter, 50,380,736 pounds	\$14,106,606
Cheese, 4,640,495 pounds	672,872
Evaporated and powdered milk, 8,820,310 pounds	793,828
Market milk, table cream and ice cream.....	10,000,000
Calves produced	2,000,000
Skim milk and butter milk	1,500,000
Casein	125,478
Total	\$29,198,784

1912.

Butter, 54,940,886 pounds	\$16,905,310
Cheese, 4,785,617 pounds	739,856
Condensed, evaporated and powdered milk, 9,770,784 pounds.....	961,662
Casein, 1,065,000 pounds	53,250
Market milk and cream	10,000,000
Calves produced on dairies	2,000,000
Skim milk and butter milk	1,500,000
Total	\$32,160,078

POULTRY INDUSTRY.

In a more or less practical way the poultry industry has been carried on in all parts of the State, but in Sonoma, Los Angeles, Orange, Santa Clara, Merced, Sacramento, Colusa, Humboldt, San Benito and Inyo Counties, and to a less extent in some others, the latest scientific methods are generally practiced with gratifying results. The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally. The largest incubator factory in the world is in Petaluma and turns out about 100,000 chicks per month, and runs to full capacity most of the year.

A ranch which has recently been started in Inyo County with 400 acres and 12,000 laying hens selected from Petaluma and from Monroe, N. Y., is an enterprise that is bidding for patronage, and with its 200,000 incubator capacity and favorable climatic conditions, will do a large part in supplying the demand, especially for eggs and baby chicks. There are many places throughout California where like enterprises could be undertaken with a fair promise of success and a good market near at hand.

The average chicken ranch near Petaluma consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, quite a number larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1.00 per year.

Notwithstanding the remarkable development of the poultry business at Petaluma and other places, the increase is not sufficient to meet the demands of the immediate market. The rapidly expanding population of the State requires the importation in season of some 425 carloads of live and 75 carloads of dressed poultry to San Francisco and Los Angeles, besides several million dozen eggs each year from Eastern points, and there is no immediate prospect of the home supply overtaking the market. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County and enjoys a freight rate by boat to San Francisco of ten cents per case of 36 dozen eggs. The market business done from that point, and its growth, is reflected in the following tables:

CALIFORNIA DEVELOPMENT BOARD

SHIPMENTS OF EGGS AND POULTRY FROM PETALUMA

Year	Eggs Dozen	Poultry Dozen
1903.....	3,407,333	32,535
1904.....	3,493,321	33,286
1905.....	3,837,061	39,392
1906.....	4,334,321	39,938
1907.....	4,422,968	59,198
1908.....	5,312,804	83,136
1909.....	7,159,481	120,018
1910.....	7,288,215	76,278
1911.....	8,134,129	80,553
1912.....	10,232,121	84,425

The above figures represent actual shipments of eggs to market. It is but fair to say that over one and one-half million dozen eggs are produced which are used for hatching and for home consumption. These added to the above, bring the total production of the Petaluma district up to near eleven and three-quarter million dozen, or about 141,000,000 eggs. 3,000,000 baby chicks are estimated to have been shipped away.

The daily food requirements for poultry in the Petaluma district for the year aggregate over 600 tons, or 1,200,000 pounds, of which wheat, corn, barley, bran and middlings form the largest part, viz: about 490 tons.

POULTRY PRODUCTION, 1912.

	Eggs, doz.	Poultry, doz.
Petaluma	10,232,121	84,425
Other points in Sonoma County.....	5,116,000	42,200
Total, other counties	26,750,000	167,500
Total for the State	42,098,121	294,125



*White Leghorns,
Poultry Farm in Sonoma County, Cal.
Courtesy of Petaluma Chamber of Commerce*

FISHING INDUSTRY.

Both the interior and the coastal waters of California abound in food and game fish, offering inducements both to the pleasure-seeker and the profit-earner.

There are about 165 species of cold-water fauna whose proper home is north of Point Conception, and 117 species of semi-tropical fauna found south of Point Conception, beyond the reach of the cold currents of the north.

Of these, one hundred and thirty-three varieties of food fish are found in the San Francisco markets, including oysters and shell fish.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento basin. Through the work of the Federal and State Commissioners, however, the rivers have been re-stocked and now there are more salmon in the Sacramento River than ever before, but they are mostly marketed as fish.

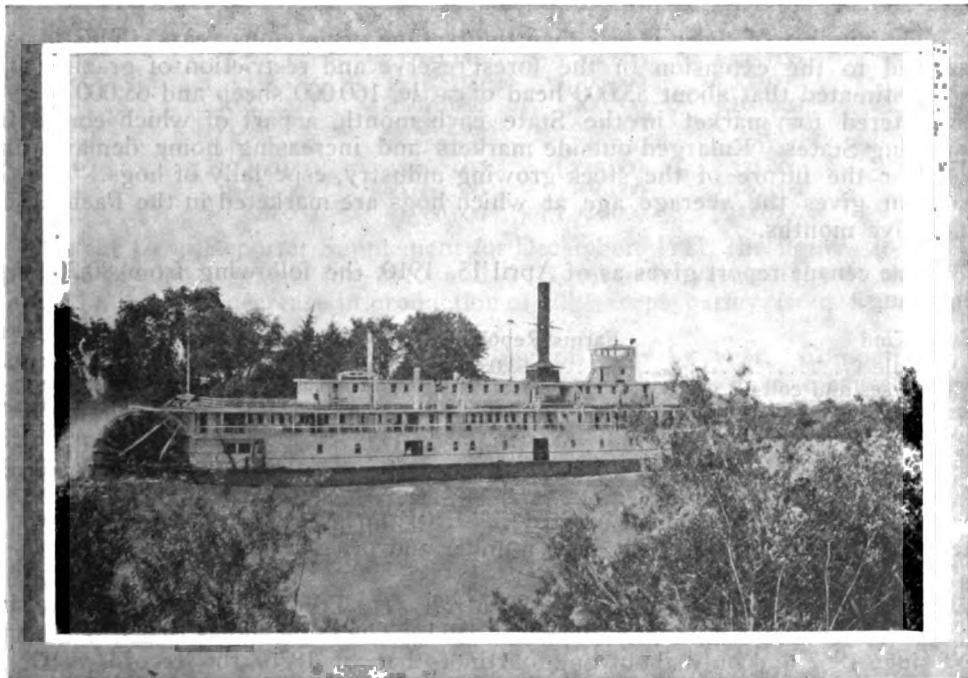
The State maintains seven hatcheries, at one of which, the Sisson hatchery, more salmon fry are hatched than at any other hatchery in the world. There is also one hatchery and two egg-collecting stations under Federal supervision. Some 30,762,000 fry of various kinds of food and game fishes were deposited in the streams in 1910. Over 30,000,000 pounds of the fish taken for the market are caught in the waters of the bay counties and the Sacramento River.

The Alaska Packers' Association maintains two large hatcheries in Alaska, and in 1912 nearly 137,830,100 salmon fry were liberated in the rivers.

Besides her home fisheries, packing salmon in Alaska waters and Puget Sound employs over fifty San Francisco vessels, many men and a large amount of California capital. The following tables show California's share of the industry, which is very large:

PACIFIC COAST FISHING INDUSTRY.

Extent of industry	California
Capital employed	\$10,000,000
Number of persons employed.....	9,000
Earnings of labor employed.....	2,250,000
Value of output	7,000,000



*Steamboat on Sacramento River Carrying Produce
Courtesy of "Sunset" Magazine*

The California pack of mild cured salmon for 1912 was 3,374 tierces, 800 pounds each.

The San Francisco codfish fleet, consisting of 13 vessels, representing an investment of \$475,000, in 1912 took 11,000,000 pounds of fish, valued at \$350,000.

The San Francisco whaling fleet, consisting of 8 vessels, took in 1911 58,000 pounds of bone, valued at \$188,500, and 2,300 bbls. of sperm oil, valued at \$38,640.

Canned salmon and other fisheries products are sent by sea from San Francisco to nearly every country in the world. Shipments during 1911 were as follows:

	Quantity		
	Cases	Pounds	Value
Canned salmon and other salmon.....	700,063	18,561.611	\$3,927,053

The Alaska Packers' Association report their pack for 1912 as 1,202,779 cases.

FARM ANIMALS

The following figures for 1911 from the Crop Reporter of the Department of Agriculture, revised by the light of the census, show an increase over 1910 in the number of all farm animals, except mules, an increase in average price of all except sheep and swine, and an increase in total number of 526,000 and an increase in total value of \$28,744,000. We also give figures for 1912, which show a slight increase over 1911 in number and value.

Kinds	1910			1911			1912		
	Number	Average Price	Value	Number	Average Price	Value	Number	Average Price	Value
Horses.....	425,000	\$117.00	\$ 49,725,000	493,000	\$117.00	\$ 57,681,000	503,000	\$109.00	\$ 54,822,700
Mules.....	80,000	133.00	10,640,000	72,000	136.00	9,792,000	73,000	130.00	9,490,000
Milch Cows.....	500,000	48.00	24,000,000	505,000	53.00	26,765,000	510,000	53.50	27,285,000
Other cattle.....	1,100,000	23.50	25,850,000	1,515,000	26.70	40,450,000	1,454,000	29.20	42,457,000
Sheep.....	2,200,000	3.90	8,580,000	2,656,000	3.00	9,562,000	2,603,000	3.70	9,631,000
Swine.....	500,000	7.20	3,600,000	830,000	8.30	6,889,000	822,000	9.20	7,562,000
Total.....	4,805,000	.....	\$122,395,000	5,331,000	.....	\$151,139,000	5,965,000	.....	\$151,247,700

The number of sheep is less than the average of previous years. This is partly ascribed to the extension of the forest reserve and restriction of grazing areas. It is estimated that about 55,000 head of cattle, 160,000 sheep and 65,000 hogs are slaughtered for market in the State each month, a part of which comes from adjoining States. Enlarged outside markets and increasing home demand auger well for the future of the stock-growing industry, especially of hogs. The Government gives the average age at which hogs are marketed in the Pacific States at twelve months.

The census report gives as of April 15, 1910, the following from 80,304 farms reporting.

Kind	Farms Reporting	Number	Value
Cattle	63,053	2,077,025	\$52,785,068
Horses and colts	76,119	468,886	47,099,196
Mules and mule colts	11,015	69,761	9,016,444
Asses and burros	1,099	2,592	347,315
Swine	31,609	766,551	5,106,803
Sheep and lambs	3,857	2,417,477	8,348,997
Goats and kids	1,714	138,413	320,829

Dairy cows are included in cattle. 61,101 farms reported 467,332 cows and heifers, valued at \$18,597,328. The number and price is increasing.

Wool: The wool clip, as estimated by Mr. E. H. Tryon of San Francisco, shows a decline compared with that of 1911. The table shows that it is the smallest since 1867 and only about one-fourth of that of 1876, the record year. The vast ranges that prevailed in the valleys of California at that time are now covered by small farms and orchards.

WOOL PRODUCTION OF CALIFORNIA—1854-1912

Year	Pounds	Year	Pounds	Year	Pounds
1854	175,000	1873	32,155,169	1893	33,169,375
1855	300,000	1874	39,356,781	1894	36,968,400
1856	600,000	1875	43,532,223	1895	35,856,690
1857	1,100,000	1876	56,550,973	1896	27,195,550
1858	1,428,000	1877	53,110,742	1897	34,882,325
1859	2,378,000	1878	40,862,091	1898	28,063,240
1860	3,055,327	1879	46,903,360	1899	28,332,090
1861	3,721,998	1880	46,074,154	1900	27,750,000
1862	5,990,300	1881	45,076,639	1901	26,900,000
1863	6,268,480	1882	40,529,119	1902	21,000,000
1864	7,923,670	1883	40,848,690	1903	22,000,000
1865	8,949,931	1884	37,415,330	1904	22,000,000
1866	8,532,047	1885	36,561,390	1905	22,000,000
1867	10,288,600	1886	38,509,160	1906	24,000,000
1868	14,232,687	1887	31,564,231	1907	15,000,000
1869	15,413,970	1888	32,569,972	1908	15,000,000
1870	20,072,660	1889	34,008,370	1909	16,000,000
1871	22,187,188	1890	34,854,640	1910	15,500,000
1872	24,255,468	1891	33,183,475	1911	14,000,000
		1892	35,802,930	1912	13,500,000

Note.—“Pulled” Wool not included in table.

FIELD CROPS

Grain. The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1898 and of rye since 1907:

Year	Wheat Bushels 60 lbs.	Barley Bushels 48 lbs.	Corn Bushels 56 lbs.	Oats Bushels 32 lbs.	Rye Bushels 60 lbs.
1898	12,403,700	12,263,461	1,184,040	1,943,304	.....
1899	29,666,666	14,046,087	1,536,975	1,845,787	.....
1900	20,933,333	19,769,760	1,351,975	1,477,771	.....
1901	28,751,500	26,162,780	1,850,793	4,887,374	.....
1902	18,759,490	23,489,065	1,839,150	5,148,583	.....
1903	14,880,990	21,075,000	1,777,162	5,756,964	.....
1904	10,895,216	24,418,604	1,350,000	5,250,000	.....
1905	5,660,360	22,094,186	1,204,000	4,735,000	.....
1906	8,333,330	26,162,790	1,100,000	4,300,000	.....
1907	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908	11,680,000	25,427,000	1,600,000	6,700,000	792,000
1909	11,550,000	31,270,000	1,740,000	6,280,000	842,000
1910	17,100,000	43,400,000	1,838,000	8,325,000	986,000
1911	8,640,000	40,600,000	1,836,000	7,140,000	136,000
1912	629,000	41,760,000	1,924,000	7,800,000	141,000

In the Crop Reporter Supplement for December, 1911, the figures for the production of these grains for 1910 and 1911 revised by the light of the census showed a material decrease in production of all except barley from figures previously published.

The acreage devoted to wheat is falling off year by year. Competition with cheap land in other countries and other more profitable crops have caused the vast wheat ranches of a few decades ago to be cut up into small farms to meet the demand from the many homeseekers, who are pouring into California.

Grain Crops. The yield and values of the cereal crops sown for the harvest of 1912, as given by the Department of Agriculture, are as follows:

REPORT OF CROPS FOR 1912.

	Acres	Bushels	Value
Wheat	370,000	6,270,000	\$5,850,000
Barley	1,392,000	46,760,000	29,232,000
Corn	52,000	1,924,000	1,635,000
Oats	200,000	7,800,000	4,200,000
Rye	8,000	141,000	127,000

Total value \$41,044,000

It appears from department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley, which now equals in acreage and exceeds in yield and value all other grain crops combined.

In the seven years ended in 1906, according to the Year Book of the Department of Agriculture, the acreage in barley increased 60 per cent, the yield 160 per cent, and the value 230 per cent. The malting qualities of California barley give it a ready market abroad.

Oats are raised, in some parts of the State, more for hay than for threshing, while corn is but little used as food for work animals. Barley has long been the main grain food in California, but of late years oats have come into use to quite an extent.

HAY AND FORAGE CROP

The hay crop of California is one of her most valuable agricultural products. The census returns for the crop of 1909, a fair year, gave the yield at 4,327,130 tons valued at \$42,187,215. These returns were as follows:

Crop	Farms reporting	Acres harvested	Quantity		Value
			Amount	Unit	
Timothy alone.....	370	13,725	20,001	Tons	\$ 185,579
Timothy and clover mixed.....	958	46,661	73,183	"	629,575
Clover alone.....	703	8,519	20,380	"	213,289
Alfalfa.....	19,904	484,134	1,639,707	"	13,088,530
Millet or Hungarian grass.....	101	2,142	2,688	"	27,483
Other tame or cultivated grasses.....	2,274	90,414	119,415	"	1,253,428
Wild, salt or prairie grasses.....	3,679	253,127	281,033	"	2,028,494
Grains cut green.....	39,397	1,604,745	2,019,526	"	24,056,727
Coarse forage.....	2,175	25,868	60,611	"	438,095
Root forage.....	1,021	4,012	90,586	"	266,015
Total hay and forage.....	53,760	2,533,347	4,327,130	Tons	\$42,187,215
Hay (Crop Reporter, 1912).....		2,500,000	3,825 000	Tons	\$52,402,000

California grain cut in the milk is highly prized for hay and is sent East by the trainload for feeding race horses.

Dairying and hog raising in connection with alfalfa raising is becoming one of the leading industries of the State being one that is within reach of the man with comparatively small capital.

The acreage of standing alfalfa has probably increased 10 per cent since 1909, making it 580,910 acres. From these, five cuttings may be made yearly on irrigated ground with an average aggregate yield of six tons per acre. The yield and value of the crop for 1912 is probably 8 per cent over that of 1909.

Beans and Other Field Crops. California is famous for the production of dried beans, onions, potatoes, etc., and they add much to the resources of the State. From the "Crop Reporter" and leading authorities in the State in handling these products, the following figures are obtained of product and value for 1912:

Product	Quantity	Farm Value at Harvest Time
Lima Beans.....	1,150,000 sacks	\$4,887,500
Pink Beans.....	350,000 "	1,225,000
Small White Beans.....	200,000 "	700,000
Other Varieties.....	840,000 "	2,582,750
Total Beans.....	2,540,000 sacks	\$9,395,250
Sugar Beets.....	980,894 tons	5,086,650
Onions.....	3,167,000 sacks	2,582,000
Potatoes, Irish.....	11,360,000 "	7,816,000
Potatoes, Sweet.....	800,000 crates (2 bus.)	1,000,000
Field and Garden Seeds (estimated).....	.....	2,500,000
Grand Total.....	.....	\$28,379,900

Hop Crop. The hop crop in California, as elsewhere, varies greatly from year to year, influenced largely by market prospects. The crop of 1911 was very remunerative to those growers who had not contracted early in the season at prevailing prices. Short crops elsewhere sent prices to a very high figure.

The acreage and production by counties for 1912 is as follows:

County.	Acreage.	Production in Bales.
Sacramento	3,485	35,921
Yuba	1,328	12,321
Yolo	1,274	11,707
Butte	785	2,584
Tehama	214	1,862
Sutter	175	1,101
Shasta	42	150
Total Sacramento Valley.....	7,303	65,646
Sonoma	4,700	35,713
Mendocino and Lake.....	1,450	15,115
Alameda	160	896
Santa Cruz	50	400
Total Coast Counties.....	6,360	52,124

Total acreage grown in California 1912 crop, 13,667.

Total number of bales grown in California, 117,770.

Crop in 1912 117,770 Bales

Crop in 1911 93,981 Bales

23,789 Increase over 1911 crop.

The following table gives California's crop for a series of years:

HOP PRODUCTION IN CALIFORNIA
1900-1912

Year	Bales	Pounds	Year	Bales	Pounds
1900.....	38,000	7,220,000	1906.....	108,000	20,000,000
1901.....	48,000	9,120,000	1907.....	90,000	16,650,000
1902.....	53,500	10,165,000	1908.....	63,200	11,692,000
1903.....	57,000	10,545,000	1909.....	69,688	12,892,280
1904.....	63,000	11,655,000	1910.....	71,511	13,229,535
1905.....	.....	13,135,000	1911.....	93,981	17,367,985
			1912.....	117,770	21,198,600

Tobacco Growing. The adaptability of the soil in certain sections and of the climate to the growing of tobacco has been successfully demonstrated in many sections of the State, though it is not yet grown to a sufficient extent to be rated by the Department of Agriculture among the commercial crops of the State.

The most notable and successful effort in this line is with Turkish Tobacco, and has been made in Tulare County and adjacent thereto, under the backing of the John Bollman Company of San Francisco. The production has been:

1909	7,000 lbs.
1910	15,000 lbs.
1911	45,000 lbs.
1912	150,000 lbs.
1913	225,000 lbs.

From the prospective acreage and better experience in handling, tobacco is without doubt destined to be one of the remunerative industries of the State when the culture and curing is more fully understood by the farmers in the sections where its success has been demonstrated. With imported free seed and the encouragement given by consumers the acreage for 1913 will be largely increased. This tobacco commands a large price and a crop can be handled successfully as a side issue by any farmer who will take the pains and advice and use his intelligence.

RICE, COTTON, FLAX, AND HEMP.

Rice. From experiments made in the Sacramento Valley during recent years by rice experts of the Department of Agriculture, the adaptability of soil and climate to the successful culture of rice has been demonstrated. Two tracts of twenty-five acres each were planted in 1908 in the vicinity of Biggs on black adobe lands. From one planting a yield of 3,000 pounds per acre was harvested.

This rice was awarded the gold medal at the Seattle Exposition in 1909.

Plantings made in 1910 justified the expectations of those interested both as to yield and quality.

The planting of 1911 given in the Crop Reporter as 150 acres yielding an average of 40 bushels per acre, 6,000 bushels in all, farm value \$4,000.

The principal planting is given by the owner as 60 acres, yielding 2,750 pounds per acre or 16,500 pounds in all.

Three varieties, Wateribune, Shinriki and Patna, chosen from a number previously tried, were used for this planting.

As given by the U. S. Crop Reporter for 1912, the acreage planted was 1400.

Yield per acre (bushels) 50.

Total production 70,000 pounds.

Value on basis of price paid farmers, \$64,000.

Rice bids fair to become one of the commercial crops of the State.

Cotton. The adaptability of soil and climate of California to the growing of cotton has been known for some years. Of late, planting has been begun on a large scale and the acreage is increasing.

In 1909 over 500 acres were planted in the Imperial Valley. Imperial County, with seeds from Georgia and Texas. The result was most gratifying, an average of over one bale, 500 pounds, to the acre being produced, some 600 bales in all, most of which found a ready market at the California Cotton Mills in Oakland. In 1910 some 12,000 acres were cultivated, producing 8,000 bales of excellent staple.

About 15,000 acres were planted in 1911, and according to the Crop Reporter, the production was 11,000 bales, 500 pounds each. It was valued for lint at \$385,000, and for seed at \$31,000; \$416,000 in all.

The acreage is increasing every year.

The value of the export of cotton shipped from Imperial County and of a comparatively small acreage of the valley, but south of the boundary line, for the season 1912-13 is estimated at about \$3,000,000.

The new industry has called for the erection of eight gins besides one or more cotton-seed oil mills.

The cotton growing has proved a success also in the Coachella Valley and at Semi-Tropic in Kern County, where a planting of 40 acres of Egyptian Cotton did well.

Cotton is being tried at other places in the State with encouraging results.

All the cotton produced in California will find a ready home market and probably cause additional factories to be added to the few already in operation in the State.

The Japanese are already in the field as buyers of California cotton.

Flax and Hemp. The culture of these valuable textile plants has lately received an impetus in several localities that promises important developments. Growers have received \$120 and upward per ton, according to the quality and fineness of the fiber. The soil in some places along the Sacramento and San Joaquin Rivers is suitable for producing a fine quality of hemp. The California Cotton Mills of Oakland buy nearly all the hemp grown in this State, which is manufactured into twine of various kinds, for all of which there is a market in the State.

BEET SUGAR INDUSTRY.

The beet sugar industry of the United States was originated in California, at Alvarado, Alameda County, and here as elsewhere grows yearly in importance.

In 1911-12 the acreage in California was about 101,000, the yield over 1,000,000 tons of beets and the output 162,538.4 short tons of sugar, leaving her in the lead of the beet sugar producing States with 35 per cent of the total production of the United States, 572,415 tons.

For the campaign for 1912-13 California with 100,612 acres, produced 980,894 tons of beets, had a sugar output of 155,432 tons of sugar, gave first place to Colorado, with 142,369 acres, 1,683,158 tons of beets and a sugar output of 223,181 tons. Lack of winter rains in California and an increase of 719,158 acres in Colorado can account for the difference.

The California factories and their locations were:

Spreckels Sugar Co., Spreckels, Monterey County.

Spreckels Sugar Co., Watsonville, Santa Cruz County.

American Beet Sugar Co., Oxnard, Ventura County.

American Beet Sugar Co., Chino, San Bernardino County.

Union Sugar Co., Betteravia, Santa Barbara County.

Los Alamitos Sugar Co., Los Alamitos, Orange County.

Southern California Sugar Co., Santa Ana, Orange County.

Sacramento Valley Sugar Co., Hamilton, Glenn County.

Pacific Sugar Co., Visalia, Tulare County.

Pacific Sugar Co., Corcoran, Kings County.

Anaheim Sugar Co., Anaheim, Orange County.

Holly Sugar Co., Long Beach, Los Angeles County.

The plant at Watsonville and the plants of the Pacific Sugar Company at Visalia and Corcoran were not operated during 1911 and 1912, but will be ready for 1913. Two new plants entered the lists, the Anaheim Company at Anaheim, Orange County, and the Holly Sugar Company at Long Beach, Los Angeles County. One new factory is in course of construction at Irvine, Orange County for the coming campaign. Others at San Diego and at Woodland are mentioned as being projected. The prices paid to growers of sugar beets the past two seasons were the highest in the history of the industry.

The Alameda Company's plant has been moved from Alvarado and will operate the coming season near Meridian in Sutter County.

The plant at Spreckels in Monterey County is the largest beet-sugar factory in the world.

The average yield of sugar beets per acre and the average percentage of sugar in California beets is greater than in Colorado or Michigan. In some parts of Cali-

ifornia the soil and climatic conditions are superior for the cultivation of sugar beets. The large average percentage of sunlight is probably the main factor in the results obtained.

The growth of the industry in California is shown in the following exhibit for twenty-five years, beginning with 1888, that being the first year statistics were obtained and published by the State Board of Trade:

BEET SUGAR PRODUCTION OF CALIFORNIA—TONS OF 2,000 LBS.

Year.	Tons.	Year.	Tons.
1888	1,910	1900	30,319
1889	2,457	1901	68,700
1890	3,351	1902	73,761
1891	5,224	1903	65,360
1892	10,761	1904	59,147
1893	17,420	1905	64,251
1894	18,615	1906	94,285
1895	23,827	1907	72,889
1896	31,815	1908	99,613
1897	35,280	1909	126,621
1898	18,086	1910	144,747
1899	42,100	1911	162,538
		1912	155,432

Taken altogether, the industry is on a most satisfactory basis and bids fair to become one of the large money producers of the State.

MINERAL INDUSTRY

The value of California's mineral product for late years shows a steady increase mainly due to petroleum. The five years ending December 31, 1912, shows values as follows:

1908	\$66,363,150
1909	82,972,209
1910	88,419,079
1911	87,497,879
1912	91,500,000 (est.)

The value for 1912 will reach a total of well over \$91,500,000, being an increase of \$4,000,000 over the production of 1911. Great activity has been evident in the mineral industry and an increased production will undoubtedly be shown in every branch, with the possible exception of copper, (owing to the fact that the "fume trouble" has not been satisfactorily solved as yet), but the value of the copper produced will show a large increase due to the advance in the price received during the year, the average being close to 16 cents per pound as against 12½ cents per pound received in 1911.

A conservative estimate of the leading mineral products for 1912 is as follows: (From the State Mining Bureau).

Petroleum, 87,000,000 bbl., valued at	\$41,000,000
Gold	20,000,000
Cement	10,500,000
Copper	5,000,000
Crushed rock, used for all purposes	4,000,000
Brick, of all kinds	2,500,000
Borax	1,500,000
Natural Gas	1,500,000
Quicksilver	750,000
Silver	750,000
Lime and Limestone	750,000
Mineral Water, Salt and Clay-pott ry	1,250,000
Miscellaneous minerals	2,000,000
Total	\$91,500,000

The remaining 26 minerals, listed as many of them are known to have had a 1911 had a total value of \$1,800,000, and miscellaneous, which were produced in greatly increased output during the year just passed, probably far exceeding the estimated \$2,000,000.

Some minerals which have had little or no production in the past, and which have been receiving considerable attention from capital recently, are: Bauxite, for the manufacture of aluminum; various iron deposits throughout the State; Barytes; Feldspar; Natural Asphalt; Potash and Nitre deposits; Tellurium, Vanadium and Magnesite.

While practically all the asphalt used in the State is a refined product, it is often listed with the total mineral output, in which case the total figure would approximate \$95,000,000.

PETROLEUM PRODUCTION

PETROLEUM The production of all the California Oil Fields for the years 1911 and 1912 was as follows:

(California Derrick)

Field	County	Wells	1911 Production	1912 Production
Midway.....	Kern.....	447	21,584,566	25,948,945
Coalinga.....	Fresno.....	736	18,324,701	19,446,122
Kern River.....	Kern.....	1605	14,978,390	12,446,445
Santa Maria.....	Santa Barbara.....	154	6,670,074	5,788,086
Fullerton.....	Orange.....	250	5,978,823	6,764,360
Sunset.....	Kern.....	196	5,559,069	5,590,824
McKittrick.....	Kern.....	178	5,447,532	6,462,350
Salt Lake.....	Los Angeles.....	245	2,794,233	2,662,776
Whittier.....	Los Angeles.....	141	1,069,437	1,125,769
Lompoc.....	Santa Barbara.....	20	795,000	1,013,880
Santa Paula.....	Ventura.....	264	515,675	740,173
Los Angeles.....	Los Angeles.....	415	429,528	410,661
Lost Hills.....	Kern.....	4	154,960	1,313,076
Newhall.....	Los Angeles.....	76	146,110	119,712
Summerland.....	Santa Barbara.....	131	71,255	65,715
Watsonville.....	Santa Cruz.....	4-5	40,850	43,920
Puente.....	Los Angeles.....	56	32,895	29,650
Arroyo Grande.....	San Luis Obispo.....	4	20,500	1,950
Total wells all districts in California and operations				
1911.....		4,942	83,744,044	90,074,439
1912.....		5,625		

These figures are from private sources and are somewhat greater than those of the Geological Survey lately published.

The U. S. Geological Survey for 1911 (the latest) places the world's consumption at one million barrels per day. Of this total 81,134,391 barrels (estimated) are credited to California. Special advices from local authorities give the California production for 1912 at 90,074,439 barrels.

The output of petroleum in California for the years 1900 to 1912 inclusive, from private sources, and the production of the United States from the U. S. Geological Survey, is as follows:

Year	California (barrels)	United States (barrels)	Year	California (barrels)	United States (barrels)
1900	4,000,000	63,620,529	1906	32,516,600	126,493,936
1901	8,000,000	69,389,194	1907	40,101,360	166,095,335
1902	13,973,500	88,766,916	1908	48,300,758	178,527,355
1903	24,337,828	100,461,337	1909	58,191,723	183,170,874
1904	24,423,860	117,080,960	1910	77,697,568	209,556,048
1905	34,275,701	134,717,580	1911	83,744,044	217,000,000
			1912	90,074,439	

Production of petroleum in the United States as above, shows a very material and constant increase during the last few years, due to the California production and is an important factor in industrial and commercial development.

Though since 1900 the California production of oil has increased from 4,000,000 to over 90,000,000 barrels, the consumption keeps up with the increase and the storage was less in 1912 than in the two previous years. For December, 1912, the consumption was reported as 6 per cent more than the production during that month.

CALIFORNIA DEVELOPMENT BOARD

	Production.	Per cent Consumption.	Per cent Storage.
1910.....	77,697,568	85.16	14.84
1911.....	83,744,044	87.09	12.91
1912.....	90,074,489	92.60	7.40

Consumption for 1912 was greater than for 1910 by 17,237,257 barrels and for 1911 by 10,449,259 barrels.

The total oil in storage December 31, 1912, was 46,698,054 barrels. The production above consumption for 1912 was 6,664,809 barrels. Visible supply December 31, 1912, was 186 days. The diminished production of other fields presages a prosperous era for the California fields for some time to come.

RANK OF STATES.

Total production of petroleum by States, in 1911, as compared with 1910 in barrels. (U. S. Geological Survey).

State.	Production. 1910.	Production. 1911.
California	73,010,560	81,134,391
Colorado	239,794	226,926
Illinois	33,143,362	31,317,038
Indiana	2,159,725	1,695,289
Kansas	1,128,668	1,278,819
Kentucky	468,774	472,458
Louisiana	6,841,395	10,720,420
Michigan }	3,615	7,995
Missouri }		
New York	1,053,838	952,515
Ohio	9,916,370	8,817,112
Oklahoma	52,028,718	56,069,637
Pennsylvania	8,794,662	8,248,158
Texas	8,899,266	9,526,474
Utah }	115,430	186,695
Wyoming }		
West Virginia	11,753,071	9,795,464
Total.....	209,557,248	220,449,391

Quantity

California not only led in quantity of product but produced almost half as much again as Oklahoma, the State second in rank. The Mid-Continent field omitted, California produced as much oil as the rest of the United States put together; the United States being omitted, California produced more oil than any entire nation, and if Russia and the United States are omitted, California far surpassed the combined production of all the rest of the world, including Mexico, India, Roumania, Galicia, Japan and South America.

WORLD'S PRODUCTION

Country	1909	1910	Barrels	Per Cent of Total Production
United States.....	183,170,874	209,557,248	220,449,391	63.80
Russia.....	65,970,350	70,336,574	66,183,691	19.16
Mexico.....	2,488,742	3,332,807	14,051,643	4.07
Dutch East Indies.....	11,041,852	11,030,620	12,172,949	3.52
Roumania.....	9,327,278	9,723,806	11,101,878	3.21
Galicia.....	14,932,799	12,673,688	10,485,726	3.04
India.....	6,676,517	6,137,990	6,451,203	1.87
Japan.....	1,889,563	1,930,661	1,658,903	.48
Peru.....	1,316,118	1,330,105	1,398,036	.40
Germany.....	1,018,837	1,032,522	995,764	.29
Canada.....	420,755	315,895	291,096	.08
Italy.....	42,388	42,388	71,905	.02
Other.....	230,000	230,000	200,000	.06
Total.....	298,326,073	327,474,304	345,512,185	100.00

The United States in 1911 produced nearly 64 per cent of the world's output of petroleum and of this California contributed about 30 per cent.

As illustrating the growing demand for fuel oil of which as shown above California furnishes the best part of the supply, we append the following from the U. S. Geological Survey, 1911:

"Thus far in locomotive use oil has simply replaced coal under boilers, but within the last year a locomotive has been constructed in Switzerland on the Diesel principle and is being subjected to thorough practical tests."

CONSUMPTION OF FUEL OIL BY THE RAILROADS OF THE U. S., 1906-11

Year	Length of Line operated by the use of Fuel Oil, Miles	Quantity of Fuel Oil consumed by Railroads, Barrels	Total Mileage made by Oil-burning engines Miles	Average No. of Miles per Barrel of Oil consumed Miles
1906.....	.....	15,577,677	.....	.....
1907.....	13,573	18,849,803	74,079,726	3.93
1908.....	15,474	16,870,882	64,279,509	3.81
1909.....	17,676	19,905,335	72,918,118	3.66
1910.....	22,709	23,817,346	89,107,883	2.74
1911.....	27,368	27,774,821	104,270,964	3.75

Some of these lines also used coal.

According to Bradstreet the oil companies of California have returned to the stockholders over \$60,000,000 in dividends in twenty years ended 1910.

PIPE LINES

To take care of California's great petroleum production a vast system of pipe lines has been constructed, a brief description of which may be of interest.

Four lines in operation are in the Coalinga field. The Standard Oil Company has two lines, one of 8-inch and one of 6-inch pipe, 133 miles in length, with terminals at Point Richmond on the Bay of San Francisco. The Associated Transportation Company has one 6-inch line in operation, 110 miles in length, with terminal at Monterey; also a line at Salinas, and another line of 8-inch rifled pipe in course of construction, which will be 198 miles long when completed, from Coalinga to the terminal at Port Costa. The Producers' Transportation Company has just completed (March, 1910) and put in operation an 8-inch pipe line from Coalinga to Port Harford, 100 miles in length, which makes a junction in the Devil's Den District with a line coming north from McKittrick, Midway and Bakersfield. It is said that the pipe line from the junction to Port Harford will soon be doubled. Shipments of crude oil are also made from this field by railroad.

The Associated Pipe Line Company has an 8-inch rifled line extending from the Kern River field to Port Costa, and the Standard Oil Company has lines running from this field to Point Richmond, a line from the Midway field connecting with them. The field is also tapped by the Southern Pacific Railroad. The crude petroleum produced in the McKittrick and Sunset fields in 1909 was shipped by rail.

Three pipe lines transport petroleum from the Santa Maria oil field. The Union Oil Company has two lines, one of 6-inch and one of 8-inch pipe, from Orcutt and Lompoc to Port Harford. The Standard Oil Company has an 8-inch line to Port Harford and the Associated Transportation Company has an 8-inch line to Gaviota. Shipments are also made from this field by rail from Careaga, Orcutt and Palmers.

CALIFORNIA DEVELOPMENT BOARD

FOREST PRODUCTS

The lumber cut of California for a series of years since 1880, as given by the U. S. Government reports, presents some interesting contrasts of amount of production:

LUMBER CUT IN CALIFORNIA FOR YEARS FROM 1880 TO 1912.

From Government Report.

	M. Feet.	Mill Value.
1880	304,795	
1890	515,823	
1900	734,232	
1905	1,077,499	
1906	1,348,599	
1907	1,345,943	\$23,640,966
1908	966,115	15,211,055
1909	1,144,000	17,160,000
1910	1,270,000	18,050,000
1911	1,207,000	18,208,000
1912 (approximately)	1,140,000	

The cut for 1912 estimated from mill reports, cargo shipments and other sources of information, is given approximately.

The cut for 1912 as well as for 1909, 1910 and 1911 exceeded that of 1908, which for a number of reasons fell far below the three preceding years.

KINDS OF LUMBER CUT IN CALIFORNIA 1910.

(Quantities Approximated.)

Kinds	1910—Feet.
Redwood	600,000,000
Western Pine or White	350,000,000
Douglas Fir	110,000,000
Sugar Pine	100,000,000
White Fir	60,000,000
Spruce	30,000,000
Cedar	15,000,000
Western Hemlock	1,000,000
Oak	1,000,000
Ash and other	3,000,000
Total	1,270,000,000

Besides the home production, California absorbed in 1912, 1,168,106,814 feet of lumber by sea from outside. 565,736,824 feet were delivered in San Francisco Bay and 505,914,788 feet at San Pedro Harbor. 36,678,000 feet were exported, worth \$1,049,613.

In addition to the lumber cut as above, in 1911 California produced about 450 million shingles and shakes, with a large number of poles, ties, etc. In 1912 something more.

The following estimate is given by the "Pacific Lumber Trade Journal" of January, 1907, as to the Pacific Coast States and Idaho, Montana, and British Columbia:

	M. Board Feet.
Oregon	225,000,000
Washington	195,658,080
California	180,000,000
Idaho and Montana	100,000,000
British Columbia	150,000,000
Total	850,658,080

At the low estimate of \$3.00 per thousand feet for stumpage, the value of timber in California as it stands in the forest is \$540,000,000. This is a large sum, but is doubtless within the truth.

The estimated wooded area of California is 28,608,000 acres. Approximately 24,058,050 acres are in National forest reserves and 4,549,950 acres in private ownership or unreserved.

The conservation of the forest areas of California is most intimately related to the welfare of the State. No greater calamity could befall the State than the denudation of the wooded lands. On the other hand, incalculable benefit will come from wise conservation of the forests and a reforestation of the already denuded areas. Conservation of natural resources must of necessity include the forests and the streams. Happily a wise governmental policy has saved enough of these areas to give assurance that their relation to the common welfare will not be seriously impaired.

Redwood. It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "clear lumber." The redwood (*Sequoia Sempervirens*) is indigenous to California, and except for a few stunted trees in Japan, is found in no other country. This growth covers a tract on the northwestern coast of California, beginning at the northern line (there being not over 2,000 acres over the line in Oregon) and occupies a continuous district from the seacoast eastward to the crest of the Coast Range of mountains about 240 miles long (north and south) and from 10 to 20 miles wide.

In this district there were originally about 1,200,000 acres of redwood timbered lands, comprising practically the world's entire supply of this magnificent wood.

The mills have removed probably not more than 20 per cent of the original standing timber, having during the fifty years averaged 220,000,000 feet per annum. The cut since 1903 from this district (comprising the counties of Del Norte, Humboldt, Mendocino and Sonoma), has averaged nearly 400,000,000 feet.

The following figures give the annual receipts at San Francisco from the California mills north of San Francisco Bay since and including 1900:

	Feet.
1900	209,001,022
1901	244,386,075
1902	262,597,015
1903	301,343,953
1904	324,676,960
1905	347,679,159
1906	409,702,573
1907	437,514,653
1908	356,549,880
1909	402,519,307
1910 (Estimated)	450,000,000
1911	311,174,000
1912	309,732,000

The above figures do not represent the actual cut, as there is about 40,000,000 to 50,000,000 feet sold in the neighborhood of the mills and about 20,000,000 feet annually consumed in San Mateo and Santa Clara Counties that is cut there. Then there is to be added still the quantity consumed in making ties, laths, shingles, shakes, etc., which will not fall far short of 90,000,000 feet a year.

Pine. The Western slope of the Sierras in California, Arizona and in Oregon are covered with a mighty forest where the Sugar Pine, (*Pinus Lambertiana*), the White Pine (*Pinus Ponderosa*), and the "Bull" Pine (*Pinus Jeffri*), flourish. Cedar is also found there and other woods. The woods with the best timber are found at elevations from 3,000 to 7,000 feet. The general run of sugar and white pine is from 3 feet to 8 and 12 feet in diameter, while the height sometimes reaches 250 feet. The territory covered is estimated to be about 400 miles in length with an average breadth of about 20 miles. The woods are white, soft and durable and are greatly in esteem in the East where practically the whole cut is sold, outside of the inferior grades which are disposed of locally. They are unsurpassed for doors, sashes, piano keyboards, matches, finish, ceiling, etc., in a word, wherever

strength, durability and ease in working, cleanliness and stability are required. There are many great plants in the interior, and one agency with \$1,000,000 capital, does the selling for a large number of mills. This helps to keep prices steady and always finds a market. The great railroad lines carry their product to every part of the United States. The work of lumbering is practically the same as in the redwood districts, steam machinery as a rule getting the logs to the mills, though in some instances ox teams are still used. Here, as in the redwood country, there are immense log ponds where the logs are stored away for the mills. The cut has run from 300,000,000 to 500,000,000 feet a year, this including mountain pine and red fir, but owing to the bad weather in the mountains lumbering in 1909 did not generally begin until June and the cut was short. The financial panic in the East also helped to lessen it in 1908. The present year, however, will restore normal conditions in this great section of the lumber industry. The production of 1900 and since 1905 may be given as follows:

	Sugar Pine. Feet.	White Pine. Feet.
1900	53,558,000	200,000,000
1906	130,231,000	347,249,000
1907	115,005,000	381,700,000
1908	92,500,000	318,406,000
1909	95,000,000	225,000,000
1910	100,000,000	350,000,000
1911	90,000,000	325,000,000
1912 (no reliable figures)		



A California Lumbering Scene

Railways. The year 1912 saw notable progress in railroad extension and betterment in California. In 1911 in new electric construction, California led with 121 miles, followed by North Carolina and Illinois, with 104 miles each. The amount of money invested in California railroads is out of all proportion to the mileage, for one mile in the mountains costs more than twenty miles in the prairie States.

The following will give the facts relating to railway progress in California:

MAIN AND SECOND TRACKS ON JUNE 30, 1912.

Includes both owned and leased (as reported by Railroad Commission.)

Steam Railroads	Miles
Southern Pacific Lines	4206.84
Santa Fe Lines	1385.68
Western Pacific Railway Company.....	390.62
Northwestern Pacific	413.60
San Pedro, Los Angeles & Salt Lake.....	246.41
Nevada-California-Oregon	196.92
Tonopah and Tidewater	144.60
Pacific Coast	103.05
San Diego & South Eastern and San Diego & Arizona.....	88.46
Yosemite Valley	79.17
Sierra Railway Company of California.....	75.64

Electric Interurban Railways

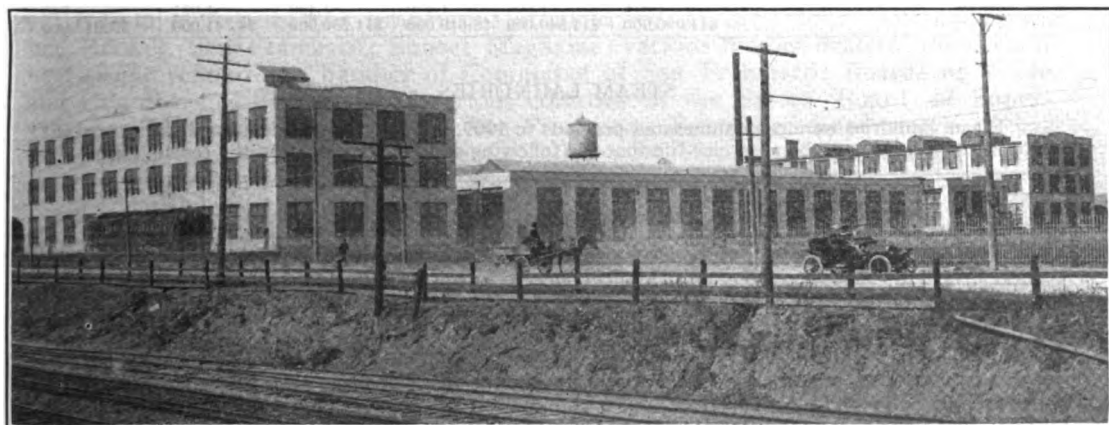
Pacific Electric Lines.....	837.76
San Francisco-Oakland Terminal Rys.....	227.20
Northern Electric Lines	141.00
Central California Traction	63.56
Peninsular	63.15
San Francisco, Napa & Calistoga	33.84
Petaluma & Santa Rosa	31.60

MANUFACTURING

(U. S. Census Report, 1910)

Summary for the State, 1909

	Census, 1909	Per cent of increase 1904-1909
Number of establishments.....	7,659	12
Capital.....	\$537,134,000	90
Cost of materials used.....	\$325,238,000	51
Salaries and wages.....	\$107,097,000	35
Miscellaneous expenses.....	\$43,819,000	61
Value of products.....	\$529,761,000	44
Value added by manufacture (products less cost of materials).....	\$204,323,000	35
Employees—		
Number of salaried officials and clerks.....	18,203	48
Average number of wage earners employed during the year.....	115,296	15
Primary horsepower.....	329,100	56



Pullman Car Shops, Richmond

CALIFORNIA DEVELOPMENT BOARD

Following are tables compiled to show the growth of manufacturing between 1850 and 1909:

Capital invested			Value of products		
Year	Amount	Increase over previous decade	Year	Amount	Increase over previous decade
1850.....	\$ 1,006,197	.....	1850.....	\$ 12,862,522	.....
1860.....	22,043,096	2097.7	1860.....	68,253,228	430.6
1870.....	39,728,202	80.2	1870.....	66,549,566	-2.4
1880.....	61,243,784	54.2	1880.....	116,218,973	74.5
1890.....	146,797,102	139.7	1890.....	213,403,996	83.6
1900.....	205,395,025	39.9	1900.....	302,874,761	41.9
1909.....	537,134,000	161.5	1909.....	529,761,000	74.8

	San Francisco		Los Angeles		Oakland		Sacramento	
	Census 1909	Per cent of increase, 1904-1909	Census 1909	Per cent of increase 1904-1909	Census 1909	Per cent of increase 1904-1909	Census 1909	Per cent of increase 1904-1909
Number of establishments.....	1,795	-20	1,325	63	441	78	211	35
Capital.....	\$133,760,000	31	\$59,518,000	111	\$19,113,000	109	\$10,097,000	37
Cost of materials used.....	\$76,175,000	*	\$38,913,000	108	\$11,847,000	175	\$6,893,000	34
Salaries and wages.....	\$30,452,000	-4	\$16,500,000	82	\$6,618,000	167	\$4,534,000	34
Miscel. expenses.....	\$13,053,000	5	\$5,649,000	106	\$2,094,000	145	\$1,356,000	77
Value of products.....	\$132,929,000	-4	\$68,586,000	97	\$22,343,000	148	\$13,977,000	39
Value added by manufacture (products less cost of materials).....	\$56,754,000	-8	\$29,673,000	84	\$10,496,000	123	\$7,084,000	44
Employees:								
Number of salaried officials and clerks....	6,116	18	3,367	68	1,079	177	533	42
Average number of wage earners employed during year.....	28,239	-27	17,327	66	6,905	106	4,514	7

—Decrease.

*Less than one per cent increase.

OTHER PRINCIPAL MANUFACTURING POINTS.

	Fresno	Stockton	San Jose	Richmond	San Diego	Eureka
Number establishments.....	76	144	153	25	117	48
Capital.....	\$4,933,000	\$8,250,000	\$3,815,000	\$14,550,000	\$5,326,000	\$3,306,000
Salaries and wages.....	\$1,431,000	\$1,681,000	\$1,152,000	\$2,760,000	\$1,069,000	797,000
Wage earners.....	1,936	1,594	1,430	3,420	1,071	946
Value of output.....	\$11,090,000	\$11,849,000	\$5,610,000	\$11,250,000	\$4,741,000	\$3,012,000

STEAM LAUNDRIES

Steam laundries were not enumerated previous to 1909, but they have become such an important factor in the domestic problem of city life that the following exhibit is made from the census report.

	San Francisco	Los Angeles	Oakland	Sacramento
Number of establishments.....	87	31	41	10
Capital invested.....	\$1,497,000	\$1,822,000	\$682,000	\$239,000
Value of output.....	\$2,663,000	\$2,364,000	\$1,067,000	\$334,000
Officials and clerks.....	169	155	98	22
Wage earners.....	2001	2,209	845	259
Salaries and wages.....	\$1,503,000	\$1,354,000	\$584,000	\$175,000

NOTE: Pending the next taking of the Manufacturing Census by the Government it is safe to estimate that the above figures have increased from 15 to 25 per cent.

CALIFORNIA'S WATER POWER.

Water-Power and Electrical Development. Closely connected with the future of manufacturing developments is the fuel and water-power supply convertible into electrical power. The statistics of oil production are given on a preceding page. The following extract from Water Supply Paper No. 234, in the report of the U. S. Geological Survey is of much interest:

CALIFORNIA'S WATER POWER.

Developed.			Undeveloped.		Maximum
Source.	Wheels.	Horsepower.		Minimum.	Development.
Sacramento River.....	576	280,735	Sacramento River	2,420,000	4,580,000
San Joaquin River.....	159	86,224	San Joaquin River (in-		
Minor streams, southern..	74	50,183	cluding Tulare Lake		
			drainage)	759,000	3,140,000
Minor streams, northern..	176	25,440	Minor streams, northern.	600,000	1,200,000
Sierra Nevada drainage...	74	17,737	Sierra Nevada drainage...	132,000	202,000
San Francisco Bay.....	11	6,455	Minor streams, southern.	36,400	88,300
Totals	1,070	446,744	Totals	3,947,000	9,210,300

California has not hitherto been classed among the States in which manufactures was a leading industry, but with abundant oil for fuel for manufacturing power and motive-power on the one side, and with 9,000,000 horsepower in water-power maximum development and a widening of markets both at home and in the Orient, California can face her industrial future with confidence.

A. L. McDonald, Statistician.

Robert Newton Lynch,

Approved by the Board and ordered printed.

Vice-Pres. and Mgr.

NOTE—For data and statistics used in this report we are indebted to the Controller of U. S. Treasury; Prof. Alexander G. McAdie, California Section U. S. Weather Bureau; U. S. Department of Agriculture; George Robertson, State Statistician; State Superintendent of Banks; State Mining Bureau; State Controller; San Francisco and other clearing houses; Superintendent of Public Instruction; State Dairy Bureau; State Railroad Commission; Auditing, Freight and Engineering Departments of Southern Pacific, Santa Fe and Western Pacific Railroads; United Railroads of San Francisco; Wine and Spirit Review, Petaluma Poultry Journal; H. P. Dimond, Secretary Dried Fruit Association of California; California Fruit Grower; Western Packer & Canner; Pacific Rural Press; Pacific Lumber Trade Journal; Okaland Tribune; Italian-Swiss Colony; Frank D. Flint & Co.; Wolf, Netter & Co.; Adolph Koshland; Peter J. Shields; T. A. Burns, San Francisco; E. W. Maslin; E. H. Tryon, E. Clemens Horst; J. K. Armsby Co.; A. K. Tichenor, Secretary Alaska Packers' Association; Pacific Fisherman; Frank Adams, Irrigation Manager Agricultural Experiment Station, U. C.; Edwin F. Adams, San Francisco Chronicle; W. D. McArthur, Dairy & Produce Broker, San Francisco; Sunset Magazine; various lumber dealers; the several beet-sugar refineries; Chamber of Commerce of San Francisco; Boards of Trade and Chambers of Commerce of various counties of the State; Board of Supervisors and Board of Public Works, San Francisco; Boards of Supervisors of various counties of the State; Sacramento Valley Development Association; and many growers, producers, and others throughout the State.

CLIMATE OF CALIFORNIA.

By N. P. Chipman.

The table on the following page is from the Annual Summary, California Section, of the Weather Bureau record for 1911. The comparative records in the article are from the Weather Bureau record for 1910, a fair average year.

California must be counted among the most valuable possessions of the United States for many reasons; chiefly, however, because of the matchless climate of the State and the high economic value it bestows upon a large area of arable land whose coast line measures 850 miles from point to point (about 1,000 miles of

actual coast), the average width of the State being about 200 miles. The south boundary line of latitude emerges on the Atlantic Coast near Savannah, Georgia, and the north parallel near Boston, Massachusetts. Between these two latter points lie ten States of the Union. It accounts for something to the nation that this extended coast line, on the Pacific Ocean, is fortified by a region capable of supporting many millions of people and that the coast to the Canadian boundary is backed by a country of almost boundless resources.

It is not generally appreciated that all of France, all of Italy north of Rome, and half of Spain lie **north of the north boundary of California**. This relative position on the west coast of our continent would suggest a mild climate, but not necessarily its unique and exceptional character. It is the purpose of the writer to bring to public attention the principal features of this climate and to show its economic value.

Professor Alexander G. McAdie, District Forecaster of the United States Weather Bureau, San Francisco, states that the climate of California is controlled by four great factors: (1) The movements of the great continental and oceanic pressure areas (commonly called "high" and "low"), together with the movements of individual pressure areas; (2) the prevailing drift of the atmosphere in temperate latitudes from west to east; (3) the proximity of the Pacific Ocean, with a mean annual temperature near the coast line of 55 degrees, Fahrenheit, a great natural conservator of heat, to which is chiefly due the moderate range of temperature along the coast from San Diego even to Tatoosh Island (extreme northwest coast of Washington); and (4), the exceedingly diversified topography for a distance of 200 miles from the coast inland. To this diversified topography is due the fact that California is a land of many climates, "from the hottest sub-tropical to the cold temperate, and from the driest desert to the most humid regions of the higher mountains and northern coast."

The Sierra Nevada Mountains form a natural boundary line on the east, rising gradually from the west to a height of from 8,500 to 14,000 feet, much above the snow-line, and falling off to the Nevada plateau, which is about 4,000 feet above sea-level. The Coast Range Mountains form a broad belt, traversing the entire coast, and consists of two or three parallel ranges from 3,200 to 5,000 feet high, and between these ranges are many rich valleys, some of large extent. The Coast Range emerges into the Siskiyou Mountains on the north, a connecting link with the Sierra Nevada, crowned by Mount Shasta; and the Tehachapi Mountains, far to the south, form another connecting link.

Between the Sierra Nevada and the Coast Range Mountains and these connecting mountain links lies the great central valley of California, about 400 miles long and from 50 to 60 miles wide; an agricultural district of great fruitfulness, comprising quite one-ninth of the State. There is but little waste land in it. The northern portion is blessed by ample rainfall, and the southern part, when watered, is everywhere very productive, as is the entire valley. The Sacramento River runs south through the northern portion (Sacramento Valley), rising near Mount Shasta; the San Joaquin River runs north through the southern portion (San Joaquin Valley); the two rivers uniting near the middle of the great valley and flowing westward into San Francisco Bay, and thence through the "Golden Gate" into the Pacific Ocean.

There is here a wide break in the Coast Range through which the summer trade winds find their way into the interior, an important factor in the climatic conditions of the valley. The sea-breeze blows up stream, north into the Sacramento Valley and south into the San Joaquin Valley, thus tempering the heat of the great valley. This influence, together with the dryness of the atmosphere, renders the occasional high temperatures of these two valleys more easily endurable at 110 degrees than is 95 degrees in the humid regions of the Eastern States.

South of the Tehachapi Mountains the Sierra Nevada Mountains continue at less elevation, and are locally called Sierra Madre. The wonderfully developed region known as Southern California lies west. On the east is the Mojave desert, and south and east the Colorado desert; important regions of the State are yet

but partially developed, but of great fertility by the application of water, which the genius and enterprise of the people are rapidly bringing in touch with the land. As in the north, the breaks in the Coast Range and in the Sierra Madre become important factors in modifying the climate of the interior. In Southern California and in Central California (San Joaquin Valley) extensive irrigation systems already in operation supply the comparative lack of rainfall. Irrigation is also being extensively developed in the Sacramento Valley.

Winds. The prevailing winds come from the ocean and are principally from the southwest landward, producing a cool summer climate along the immediate coast. Fogs sometimes sweep in from the ocean, more or less unfavorably affecting the enjoyment of the climate, but by their moisture contributing to the growth of vegetation. These fogs are less harsh on the south coast. The heat rising from the great valley draws a strong current from the trade winds through the Golden Gate that divides as it passes and extends south to the Tehachapi Mountains and north to Mount Shasta, rendering the air of the valley more delightful. The same drift of the trade winds tempers the air far into the interior in Southern California. The high mountain barrier on the east, through the length of the State, deflects the cold winds that sweep down over the Nevada plains in winter from Alaska and prevents their entrance into the valley regions of California. Dry north winds sometimes blow through the great valley in summer, raising the temperature, and are occasionally injurious to growing crops, but they seldom continue more than three or four days, when they are succeeded by the balmy and cool ocean breezes. Along the immediate coast the average winter and summer temperature differs only about four degrees, and one of the characteristic features of the San Francisco climate is exemplified by the sight of furs worn by ladies over summer garments, and fires in summer are not infrequent.

All over the coast, however, there are thousands of sheltered nooks and small valleys and sequestered spots where the fogs and harsh winds of the coast have no appreciable effect and where the climate is charming and sunny to the last degree, both in winter and summer.

Rainfall. The terms "winter" and "summer," as commonly used in the Eastern States, have no application in California. The year is more properly divided into "rainy season" (winter) and "dry season" (summer). Practically all the rain falls from about the first of November until April; the remaining months of the year are rainless, except in some parts of the mountains and on the Coast north of Cape Mendocino, where occasional summer showers occur. Cereal crops mature in early summer after rain ceases, and no housing of crops is necessary for protection against rain in harvest time.

The rainfall of California is a characteristic feature of the climate. A word as to its source and cause will be interesting. Professor McAdie points out that over the North Pacific Ocean in winter there exists an area of low barometer (latitudes 40 and 60 degrees north and 130 degrees west to 140 degrees east longitude), while an area of high pressure overlies the greater part of North America with a southwest extension to the tropics and west to the one hundred and sixtieth meridian. He says: "We shall find that typical wet winters on the California coast occur when this great North Pacific 'low' extends well eastwards, overlying the continent west of a line drawn from San Francisco to Calgary (Canada). At the same time the great continental high area apparently recedes to the southeast. On the other hand, the pressure distribution characteristic of a 'dry' winter on the California Coast is marked by the prevalence of the continental 'high' over the entire country west of the Rocky Mountains."

Our winter rain storms (barring an occasional one coming in from the ocean unheralded) have their origin off the coast of Vancouver, and curiously enough are attended in the Sacramento Valley by south winds. The storms diminish in intensity as they travel south, tapering off as they approach Southern California.

The Weather Bureau record for 1910 showed the great variations of rainfall within the State, and even within the great valley. For example, the rainfall at Eureka, Humboldt County, on the immediate coast, was 29.65 inches, and at San Diego but 5.75 inches. At Redding, Shasta County (interior), the rainfall was 24 inches; at Red Bluff, forty miles south, 14.59 inches; at Sacramento, 7.78 inches; Fresno (center of San Joaquin Valley), 4.88; Bakersfield (extreme southern point of valley), 5.31 inches. In the Sierra Nevada Mountains the rainfall increases about one inch for every hundred feet elevation. It will be observed that the rainfall south of the Tehachapi Mountains (Southern California) is greater than at the extreme southern portion of the San Joaquin Valley.

The direction of the Coast valleys exerts striking influence upon rainfall and temperature, dependent upon the facility for the trade winds to reach them. The climatic and agricultural character of the foothills, up to 2,000 or 2,500 feet, is much the same as in the valley, although the character of the soil is different. Even higher, fine deciduous fruits are grown. Still higher are the lumbering and mining camps, and thousands of cattle and sheep are herded in summer, where in winter the mountains are deeply covered with snow. Illustrative of the characteristic variations of climate, it may be stated that in the vicinity of Summit, Placer County, elevation 7,017 feet, the temperature was 2 degrees above zero, and the snowfall for the year was 257 inches. At Rocklin, Placer County, 30 miles west, elevation 249 feet, the lowest temperature was 24 degrees above zero. All the natural ice consumed in California was made near Summit, while oranges were being gathered for market around Rocklin.

Temperature. The foregoing table shows not only temperature, but also rainfall, elevation of points above sea, clear and cloudy days. I have taken illustrative points in Northern and Central California, the Coast country and the mountains. It will be noted that while the annual mean temperature of the Pacific Coast does not differ greatly from the annual mean of the Atlantic Coast, the average summer and average winter here and on the Atlantic Coast are wide apart, and the extremes between the highest and lowest temperature are here not very great. It is this exemption from extremes of temperature that constitutes the charm, and healthfulness as well, of the Pacific Coast.

In the interior, especially in the great valley, the seasons show greater extremes of temperature, but, as already suggested, the dryness of the air renders these extremes less felt than on the Coast, where the air is more moist. The limit of winter cold is the test of what may be grown rather than the average temperature.

And so we find citrus fruit flourishing from the north to the south end of the great valley, and orange growing is a leading industry in several counties of that valley. In Southern California both the heat and the cold are comparatively milder, although the readings of the thermometer do not much differ from the points north of the Tehachapi. It is shown by the table that there were 211 clear days in San Jose as against 194 in Los Angeles during the year, although there were twice as many rainy days in San Jose. Abundant sunshine is also found in the interior. For example, Sacramento, in the north, had 230 clear days, and Riverside, in the south, 237. In truth, the California of "sunshine, fruit and flowers" is pretty nearly the whole State, below high mountain elevations.

Climate Unchanging. As far back as we have any recorded history, and behind this, embracing traditions coming through the early Mission fathers, we learn of the same equability of temperature, the same balmy atmosphere, the same luxuriance of vegetation. Our soil may require renewing by fertilization, but our climate is as constant as the sun. The conditions which have produced the result are themselves unchanging, and so must be the result.

It is Health-Giving. California is a universal sanitarium. The climate of the Coast is invigorating, stimulating and delightful, neither hot nor cold; the laborer knows no fatigue except from physical exhaustion resulting from over-taxed muscles. The brain worker yields only to failure of

mental powers. In the interior valleys in midsummer, the temperature is higher, and there is discomfort at time while working in the harvest fields and at the desk and behind the counter. But the dryness of the air robs the thermometer of much of its terror. The sensible temperature, i. e., the temperature we in fact experience or feel in the valleys, is less irksome at 100 or 110 degrees than in regions of greater humidity of the atmosphere where the reading is from 85 to 95 degrees. Sunstroke here is unknown. It is the common experience of persons coming into almost any part of the State that they increase in weight and strength, are less troubled with nervous affections, sleep and eat well, and improve in health if ailing from any cause.

Source of Happiness. The variety of temperature and climatic conditions existing in the mountains, valleys, and on the Coast, and the celerity and ease with which our inhabitants may change their immediate surroundings, constitute one of the great charms of California life. Thousands of families residing in the valleys find their way into the mountains or to the seacoast and have most delightful camping-out experiences; and this they do in a few hours or a day or two at most, with their own conveyances. Our valleys and mountains lie so related to each other that no spot can be found devoid of scenic beauty. There is no dull monotony in the farmer's life as there is from necessity in the lives of those who reside on the great plains, regions of the West, few of whom are ever permitted to enjoy the inspiring and elevating means of recreation and rest from labor which are a part of our life here.

Some Peculiarities. Degrees of latitude cut little figure in determining the readings of the thermometer, which is not at all true on the Atlantic Coast and in the West. The foregoing table tells the story from official sources for 1910 and is valuable as covering the whole distance and intermediate points, from San Diego, near the south line of the State, to Hornbrook, Siskiyou County, near the Oregon line, nearly ten degrees of latitude apart.

The fact that latitude has little to do with our climate is a remarkable feature. It is not true of Italy, for there is a great variation there between the temperature north and south. It is not true of France or elsewhere along the west coast of Europe. We believe this to be a peculiarity unique and found only on this Coast. This peculiarity is further attested by the fact that in nearly the whole length of this vast region the same fruits are grown. Within a radius of fifty miles around Oroville, which is 150 miles north of San Francisco, and 650 miles north of Los Angeles, there were nearly five hundred (500) carloads of oranges raised last year and shipped out of the State, and they ripen earlier than in the south. Elevation has much more to do with temperature than latitude, for in high altitudes we find snow. Our mountain summer climate is extremely delightful and is destined to draw many Eastern people to the numerous charming retreats in the Sierra Nevada and the Coast Range.

Economic Value. But, after all is said, it must be conceded that climate is our greatest resource because of its high economic value, as it is also our most valuable asset. The unthinking speak of climate as an attraction rather than a resource, but it is a resource because by its influence we are enabled to so marvelously diversify and increase the number of our agricultural products, and often, too, all these products may be grown on the same body of land. It is a resource, because man's labor here can be profitably employed every day in the year; because there is no month when vegetation in some form is not growing, and because it furnishes ideal conditions for the growth of irrigated crops. There is no time in California when all nature is at rest or plant life is sleeping. In the field, orchard, garden, factory, and in the mines; on the stock-farm and in the dairy, every day is a day of productive labor. We commence shipping fresh deciduous fruits in May and there is no cessation until December. In November we begin to ship citrus fruits, and they overlap the deciduous fruits and continue, in fact, the year through.

Professor E. W. Hilgard justly sums up the matter thus: "Taken as a whole, California corresponds in its climatic features and adaptation to the Mediterranean region of Europe and Africa—a grand Riviera, with a partial background of the desert as well, where the date palm and the ostrich find a congenial home, and alluvial plains equaling in richness the famed delta of the Nile."

IRRIGATED AGRICULTURE—THE DOMINANT INDUSTRY OF CALIFORNIA.

By SAMUEL FORTIER, Chief of Irrigation Investigations, U. S. Department of Agriculture.

California has always been considered a State of great possibilities. Her mines and her commerce and her climate and agriculture have long been the theme of inspiring pen-pictures. With a range of climate and soil and of mountain and valley more varied than that possessed by any of her sister States, with a geographical position and commercial facilities naturally favorable to intensive development, she has ranked as the leader in the upbuilding of Western America. But while her gold and her seaports and her forests and commerce have made her position unique among the States, her future has always been considered bound up in her agriculture. Over half a century of development has shown that if this agriculture is to be the best of which the State is capable, it must be founded on irrigation, and for years the careful husbandman has, over a large portion of the State at least, made the artificial application of water to land an important part of his industry. Hence it is that any treatment of irrigation in California must consider not only what has been accomplished, but what seems possible of accomplishment in the future.

The total land area of California is approximately one hundred million acres. According to the irrigation census of 1909, 2,664,104 acres were actually irrigated in 1909. According to investigations made in 1911 and 1912 for the Department of Agriculture and the State Conservation Commission of California, the area in the State now watered is upward of 3,150,000 acres. These statements, however, do not convey a true idea of the relative importance of irrigation to agriculture in California. Quoting the source of information last cited, the total area of irrigable agricultural land found in the zones of irrigation water supplies, which includes all of the valley lands, the rolling plains of the Great Valley, the arable portions of the Sierra foothills up to about 3,000 feet in elevation, and all of the plateau and desert lands to which some irrigation water supplies are available, is 21,866,000 acres. This estimate does not include the rolling and broken arable acres in the coast range mountains, on some of which small local water supplies may sometime be used for irrigation. Of the total area suited to irrigation, agents of the Irrigation Investigations of the Department of Agriculture estimate that upward of 9,500,000 acres will ultimately be watered. Yet this is not the whole truth. In 1909 about one-fifth of all the irrigated land in the United States was in California, and this State ranked first in the total number of irrigated farms and in the total construction cost of systems. The highest priced irrigated land in America is found in California, and in no other State has water for irrigation reached so high a value, or been as carefully and as economically used. And in no other State is there so great an area of fertile farming land for which the available supply is so large.

Irrigation, like any other development, has followed the lines of most evident financial returns. Hence the localities of least annual and summer rainfall were the first to be reclaimed by the artificial use of water. The tide of irrigation, however, has been moving steadily northward, and excepting in the sections of excessive rainfall, the necessity for irrigation, or at least the value of it where it is not a complete necessity, is almost universally recognized. While heretofore, then, irrigation has followed the line of the most evident return, in the future it will follow the available water supply.

The water supply of the State is in its streams and wells. The wells now dug and in use are chiefly in Southern California and in the Sacramento, the lower San

Joaquin and the Santa Clara Valleys. Only the larger streams of the State have been measured, and without reliable data it is impossible to estimate the flow in the hundreds of smaller streams.

The supply in the larger streams, as measured by the United States Geological Survey, is given in the following table. These figures give in round numbers the average annual flow in acre-feet for the past four to six years:



*Irrigating an Orchard.
Courtesy of "Sunset" Magazine*

TOTAL MEAN ANNUAL FLOW OF CALIFORNIA STREAMS IN ACRE-FEET.

Name of Stream.	Station.	Acre-feet.
San Joaquin River	Herndon	1,840,000
Tuolumne River	La Grange	2,130,000
Kings River	Sanger	2,138,000
Stanislaus River	Knight's Ferry	1,365,000
Merced River	Merced Falls	1,220,000
Kern River	Bakersfield	658,000
Kaweah River	Three Rivers	534,000
Tule River	Porterville	180,000
Salinas River	Salinas	200,000
American River	Fair Oaks (near)	3,610,000
Yuba River	Smartsville (near)	3,256,000
Feather River	Oroville	6,095,000
Cache Creek	Yolo	420,000
Stoney Creek	Fruto (near)	570,000
Sacramento River	Red Bluff (near)	10,175,000
Southern California streams		200,000
Colorado River at Yuma (one-half flow)		15,550,000
Total		41,866,000

Leaving out of consideration the water supply available in the creeks and smaller rivers, 42,000,000 acre-feet of water is sufficient to cover the 14,000,000 acres of agricultural land in California to depth of over 36 inches, which is ample for the growth of all crops. This vast quantity of water can never be entirely utilized in irrigation, because it cannot be fully controlled, but the statement of it

shows the tremendous potentialities of California irrigated agriculture.

Using the figures of the census of 1909 as a basis, the total cost of irrigation systems in California has been \$72,445,669, or \$20.02 per acre. From 1902 to 1909 the increase in the irrigated area averaged about 135,000 acres per year.

From the returns made by assessors and the shipments of products out of the State it is possible to form an approximate estimate of the value of a part of the irrigated product. Of the 300,000 acres in vines and an equal area in orchards, the annual gross returns to the growers would not vary far from \$150 per acre, or \$90,000,000 in all. Then, in addition, there is alfalfa, vegetables, small fruits and other crops, the greater part of which are irrigated. The gross returns from these would increase the annual value to the extent of \$45,000,000.

It has already been stated that irrigation was first resorted to in California in those sections where a profit from irrigation was first most evident. These sections have, of course, been where the rainfall is least. In that portion of the State south of Tehachapi, commonly known as Southern California, the development of irrigation was rapid, continuing with bounds until the water supply available in the streams was practically exhausted. Since then the irrigated area has been extended only by resort to pumping from wells and by endeavoring to make the water already diverted irrigate two acres where it irrigated only one acre before. The total area included within projects in various parts of the State in 1909 was 5,490,360 acres, of which about 70 per cent was actually irrigated in 1909. Outside of Southern California, the principal areas irrigated from wells and springs were located in the San Joaquin and Sacramento Valleys and in the Santa Clara Valley.

The General Summary on page 6 is a brief statement of what has been accomplished by private enterprise during less than half a century in reclaiming a portion of the irrigable lands in California. The attention of the reader has likewise been called to the natural resources in both land and water which remain undeveloped, awaiting the concerted action of industrious farmers. Notwithstanding the magnitude of this task, we believe that it can be accomplished. The same intelligence, energy and perseverance which wrested over 3,000,000 acres from barren sands and low-producing grain fields can reclaim other millions of acres.

Of late years large sums of money have been expended on both the northern and southern borders of California by the United States Reclamation Service in the construction of irrigation works. These will materially increase the revenues obtained from irrigated farms and orchards.

On the southern boundary of the State, over 16,000 acres of the Yuma Project are in Imperial County, California. This, with about 14,000 acres included in the Orland Project, makes a total of 30,000 acres under these projects. In addition, an area, whose exact acreage is not yet certain, will be watered in California by the Klamath Project, in Modoc and Siskiyou Counties.

The areas thus far developed may be divided into three general groups depending upon their geographical location. The first comprises the territory south of Tehachapi Pass which is dependent on small rivers, mountain streams, flowing wells and pumping plants for its supply of water for irrigation purposes. The second area includes that covered by the San Joaquin River and its tributaries known as the San Joaquin Valley. The third area is the drainage basin of the Sacramento River and its tributaries covering central and interior Northern California. A partial description of irrigation in the Sacramento Valley is given in Bulletin 207 of the Office of Experiment Stations, U. S. Department of Agriculture, and similar reports on the San Joaquin Valley and Southern California have been prepared by the same office. In 1912 an irrigation map of the State was published at the joint expense of the Department of Agriculture and the Conservation Commission. In addition reports prepared in the Irrigation Investigations of the Department of Agriculture and printed in the 1912 report of the State Conservation Commission and in Bulletin 254 of the Office of Experiment Stations of the Department of Agriculture, outline irrigation conditions and possibilities in every section of the State.

What is most needed in this State and what we should most highly prize is an influx of industrious settlers, each possessing sufficient means to enable him to make a fair start along the line of irrigated agriculture. The opportunities open to this class are exceptionally good. All of the natural advantages essential to the success of the irrigated farm are to be found in the great central valley of California—fertile soil, good climate and an abundant water supply. Yet these natural gifts count for little when not utilized. We need the intelligent brain and the trained hand of thousands of farmers to make the best possible use of these advantages. In much of this work no large amount of capital is required. In this connection it may be a surprise to some to learn that there are about 1,870,000 acres of rich valley land now included in California irrigation projects but not irrigated. Much of this land is for sale at reasonable prices. The water supply for a much larger area is readily accessible, and both land and water can be united under the most favorable circumstances whenever a sufficient number of citizens join to bring it about.

This dominant industry of California is in no danger of languishing for a few years to come on account of the lack of irrigation canals and storage reservoirs. The State is now filling up at the rate of about 100,000 people a year, and there is sufficient unirrigated land under canal systems to provide for this influx of settlers for the next ten years. The settlers should understand, however, that there are difficulties in the way of irrigation in California, as there are wherever irrigation is practiced. A brief review of some of these may not be out of place.

It has been stated that about 1,870,000 acres of fertile valley land are now included in irrigation projects but unirrigated. Much of this land has been cultivated for years, but it does not necessarily follow that it is ready to receive water. It may cost on an average of \$15 per acre or more to construct permanent farm ditches to prepare the surface for irrigation. Information regarding the methods of irrigation, cost of preparing the land, size and grade of farm ditches, etc., are available in a number of publications, but notably in Farmers' Bulletins 263, 373, 392, 399 and 404 of the U. S. Department of Agriculture. If the task of preparing land is attempted by settlers from the humid states without their first making every effort to avail themselves of the experience of older irrigators, partial failure, at least, will be very apt to result. And in addition to the perplexities of preparing land for irrigation, others equally trying are quite sure to be encountered in applying water to land. Most beginners use too much water. The evils of this, including the waste of valuable water and injury to crops and soil, are apt to be considerable, and every effort should be made to see that they are avoided. As the land adapted to agricultural purposes becomes settled and as the available water is appropriated, the irrigable area can only be increased by improved methods of use, making it possible to irrigate three acres with the supply now being used on two. Requirements and practice vary with localities, but in every locality there are some careful irrigators whose advice, well mixed with common sense, will help to guide the newcomer along a safe path.

Besides the practical difficulty of preparing land and applying water, the irrigator in California must give careful attention to problems of the rightful ownership and equitable distribution of water. Nature usually provides an abundant quantity of snow on the elevated ranges to supply the soil of the valleys with the requisite amount of moisture, provided that it is properly husbanded and distributed or made available for use at the proper time by storage; but the State, unfortunately, has failed to make adequate provision for determining the rights of claimants to water, or for distributing to each his equitable portion. As conditions now exist, some receive too much, while others receive too little. It is to be hoped that before long the State will do as much toward protecting the rights of irrigators as some of the other Western States have done.

EDUCATIONAL FACILITIES IN CALIFORNIA.

The educational advantages found in California are many and of a high standard. Few States have made more liberal provision for a general system of public instruction. The law requires the establishment of schools and provides for their maintenance. Appropriations amounting to over twenty million dollars are expended for this purpose each year.

It may be truthfully said that no child in California is without school privilege and no community without a school. Whenever there are fifteen children in any district a school may be established and maintained as long as an average of five is in attendance. Industrial education has grown much in favor and now has strong support in most communities. The cities maintain well equipped polytechnic high schools.

Under a constitutional amendment recently passed all pupils in the primary and grammar schools of California are provided with free textbooks.

There are seven normal schools conducted by the State for the professional training of teachers of the grammar grades.

Higher education in California is represented by two great universities that are classed among the leading institutions of learning in America. The University of California at Berkeley is maintained at public expense, its doors open free to all students of the State of both sexes who are qualified by preparatory training. Not less noted is the Leland Stanford, Jr., University at Palo Alto.

The State maintains a University Agricultural School at Davis, a State Polytechnic School at San Luis Obispo. One of the Normal Schools, Santa Barbara, has for its special purpose the training of teachers to teach the manual arts and home economics.

Besides these public institutions there are a number of private academies, military schools, convents and religious schools and colleges of recognized merit in different parts of the State.

Twenty-two counties in California now have adopted the County Free Library system. Each of these counties has a trained librarian in charge of the work, and two hundred and fifty-five branch libraries have been established, most of them in small towns or rural districts. The County Free Library system guarantees free service to all residents in the counties which have adopted it, no matter how remote from towns and postoffices they may be. Co-operation between the County Libraries and the State Library at Sacramento is close, and the latter circulates its books in response to unusual demands for specialized reading, thus there is practically no limit upon the range of literature at the command of the person living within one of the counties having a Free Library. The County Free Library as organized in California is unique, and is recognized in other States and in foreign countries as the most important development that has taken place in the library world during recent years.

Religious Facilities.

The opportunities for religious instruction and worship are the same as in other States. Religion has played a large part in the life of California. The Roman Catholic Church made its dramatic entry in 1769 under the early Spanish Padres; the Greek Catholic Church established itself at Fort Ross in 1811. The first Protestant Church was organized at Benicia by the Presbyterians in 1849. The first meeting house built in the State was the First Baptist church of San Francisco in the summer of 1849.

The census taken in 1906 shows a church membership of 611,464, a net increase since the census of 1900 of 330,845 or a little over 20,000 a year. Population increase, a little over 58,000 a year.

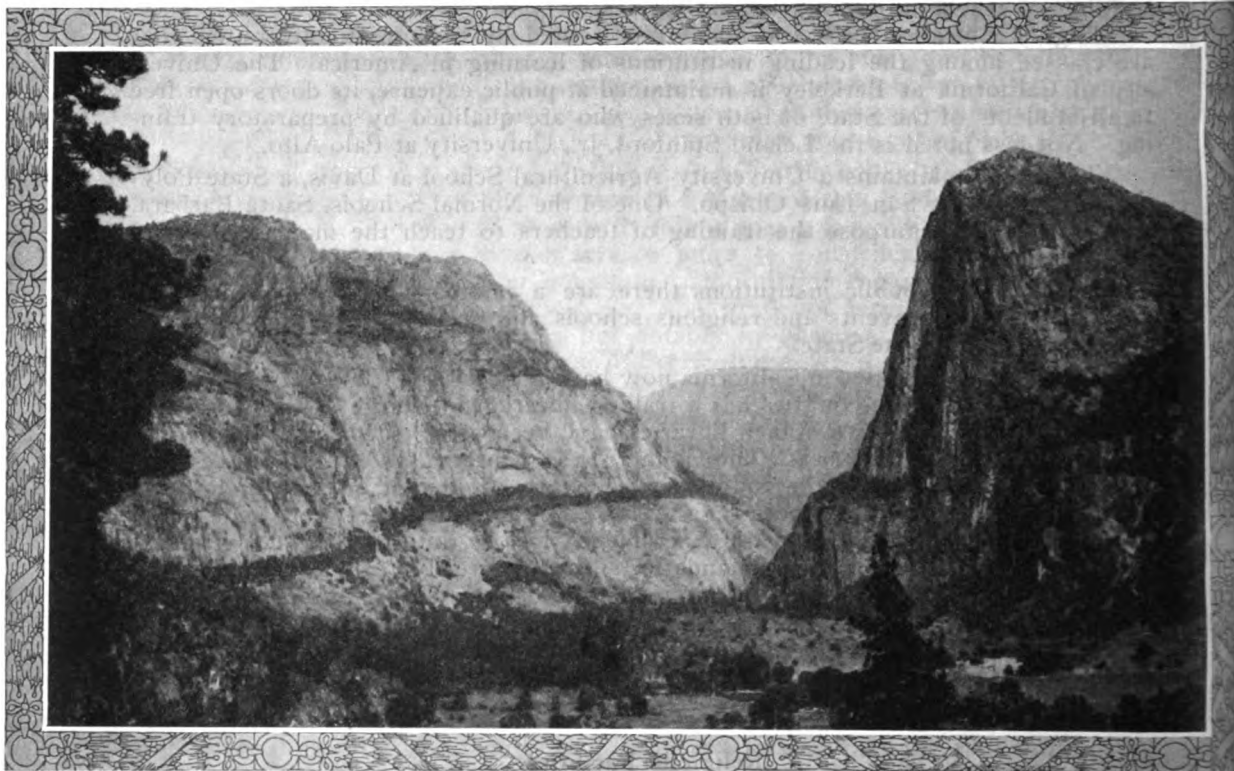
The church growth was a little more than one-third of the actual population growth from year to year.

The relative standing of religious bodies according to latest religious census is as follows:

Total Church Membership	611,464
Roman Catholic Membership	354,408, that is 58 per cent.
Protestant Membership	236,007, that is 38.6 per cent.

The leading Protestant bodies rank thus:

Name.	Numbers.	Per Cent.
Methodists	64,528	10.6
Presbyterians	37,682	6.2
Baptists	24,801	4.1
Congregationalists	23,690	3.9
Episcopalians	21,317	3.5
Christians	21,033	3.4
Lutherans	11,371	1.9
Total	204,422	33.6



*View of the Hetch-Hetchy, Tuolumne Co., Proposed Head of San Francisco Water System
Courtesy of "Sunset" Magazine*

SUMMARY OF VALUES.

Summary of the farm, packing house and factory values of products of California's soil and connected industries for 1912, marketed by the producer and for the most part shipped out of the State. Consumption by producers not included except in cases of animals slaughtered by rural population.

Compiled from data gathered from growers, dealers, distributors and other authoritative sources.

SUMMARY OF VALUES

61

	Value.	Total Values.
Orchard Products:		
Fresh deciduous fruits, including apples	\$10,016,750	
Citrus fruits	34,067,840	
Dried fruits	20,100,000	
Prunes	8,972,500	
Canned fruits and vegetables	18,000,000	
Olives and olive oil	2,350,000	
Nuts	3,650,000	
		\$97,157,090
Vineyard Products:		
Table grapes	6,000,000	
Raisins	5,175,000	
Wine and brandy	15,000,000	
		26,175,000
Garden Products, fresh		6,842,950
Dairy and Poultry Products:		
Dairy products	32,160,078	
Poultry products	17,600,000	
Honey, wax, etc.	620,900	
		50,380,978
Farm Products:		
Barley	29,232,000	
Wheat	5,850,000	
Oats	4,290,000	
Corn, rye, rice	2,306,000	
		41,678,000
Farm Products, continued:		
Grain, grass hay and alfalfa	52,402,000	
Hops	4,477,000	
Sugar beets (paid growers \$5,086,650)	14,737,500	
Broom corn, tobacco, etc.	176,500	
		71,793,000
Other Field Crops:		
Potatoes	7,816,000	
Potatoes, sweet	1,000,000	
Beans	9,395,250	
Onions	2,582,000	
Seeds and sundry other	2,275,000	
Melons	2,400,000	
Cotton	700,000	
		26,168,250
Fish Industry:		
Coast and interior (all kinds and products)	3,600,000	
Salmon fisheries, etc.	7,000,000	
		10,600,000
Forest Products:		
Lumber, mill value	12,680,000	
Other forest products (est.)	10,625,000	
		23,305,000
Petroleum: (90,074,439 bbls.)		\$41,000,000
Other Mineral Products:		
Gold (report of Mining Bureau)	20,000,000	
Cement (report of Mining Bureau)	10,500,000	
Copper (report of Mining Bureau)	5,000,000	
Other minerals (report of Mining Bureau)	10,925,000	
		46,425,000
Farm Animals and Products:		
Increase over 1909 (U. S. Census Report)	33,844,450	
Slaughtered for market in cities	20,700,000	
Slaughtered in rural districts and towns	10,150,000	
Other animal products	4,600,000	
		69,294,450
Sundry Others, not included above:		
Nursery products	3,550,000	
Florist products	900,000	
Fruits marketed in cities	9,500,000	
Vegetables marketed in cities	14,750,000	
Cider, vinegar, etc.	2,000,000	
		30,700,000
Total		\$541,519,718
Manufactures (as reported by Census, 1910)		\$29,761,000
Manufactures, increase 5 per cent, (1912)		26,488,050
Grand Total		\$1 097,768,768

CALIFORNIA DEVELOPMENT BOARD.**Officers.**

Wm. J. Dutton	President
Robert Newton Lynch	Vice-President and Manager
Wells Fargo Nevada National Bank.....	Depository

Executive Committee.

N. P. Chipman,
Robert Newton Lynch,
James Irvine,
B. F. Walton,
John P. Irish,
M. F. Tarpey,
Mark L. Requa,

A. L. Scott,
Wm. J. Dutton,
Chester Rowell,
R. B. Hale,
A. B. C. Dohrmann,
Frederick J. Koster,
Miles Standish,

Mortimer Fleishhacker.

ACTIVE MEMBERS.**County Representatives.**

Alameda	Theo. Gier, Oakland
Butte	E. A. Jackson, Oroville
Colusa	
Contra Costa	E. B. Anderson, Walnut Creek
El Dorado	
Fresno	Wm. Robertson, Fresno
Glenn	E. W. Maslin (Appraisers Bldg., San Francisco)
Humboldt	J. F. Coonon, Eureka
Kern	John P. Irish, Oakland
Lassen	
Los Angeles	H. Z. Osborne, Los Angeles
Madera	H. H. Whitmore, Madera
Marin	John J. Mazza, Corte Madera
Mendocino	P. I. Lancaster, Willits
Merced	C. H. Edwards, Merced
Modoc	
Monterey	
Napa	
Sacramento	James H. Devine, Sacramento
San Benito	
San Joaquin	A. H. Wright, Stockton
San Mateo	
Santa Clara	Jos. T. Brooks, San Jose
Shasta	W. Coyne, Redding
Solano	Thos. Smith, Vallejo
Sonoma	Thomas Maclay, Petaluma
Stanislaus	J. W. Davison, Modesto
Sutter	B. F. Walton, Yuba City
Tehama	N. P. Chipman, Sacramento
Tulare	Arthur E. Miot, Visalia
Yolo	T. B. Gibson, Woodland
Yuba	A. L. McDonald (Ferry Bldg., San Francisco)
North of Bay Counties Association.....	Robert Newton Lynch, Petaluma

Individuals, Firms and Corporations.**Representatives.**

Anglo & London Paris National Bank.....	C. F. Hunt, Sansome and Sutter Streets
Baker & Hamilton	Wakefield Baker, Fourth and Brannan Streets
Bank of California	Chas. K. McIntosh, California and Sansome Streets
Bank of Daniel Meyer	Henry G. Meyer, 244 Pine Street
Brewers Protective Association.....	J. A. Hieronimus
Care Union Brewing & Malting Co.	18th and Florida Streets
Brown, Walker, Simmons Co.	Frank L. Brown, Crocker Bldg.
California Barrel Co.	Frederick J. Koster, 22nd and Illinois Streets
California Door Co.	E. H. Kittredge, 43 Main Street
California Pine Box & Lumber Co.	G. X. Wendling, Flood Building
Crocker National Bank	J. B. McCargar, Market and Post Streets
Emporium	Wm. Kaufmann, Market near Fourth

Fireman's Fund Insurance Co.	Wm. J. Dutton, California and Sansome Streets
First National Bank of San Francisco	C. H. McCormick, Montgomery and Post Streets
Fuller, W. P., & Co.	Frank W. Fuller, 301 Mission Street
German Savings & Loan Society	Geo. Tourny, 526 California Street
Gunst, M. A., & Co.	A. I. Esberg, California and Front Streets
Hale Bros., Inc.	R. B. Hale, Market and Fifth Streets
Halsey, N. W., & Co.	Cyrus Pierce, 424 California Street
Hibernia Savings & Loan Society	R. M. Tobin, Jones and McAllister Streets
Hind, Rolph & Co.	R. S. Clarke, 310 California Street
Hotel St. Francis	James Woods, Geary and Powell Streets
Mercantile National Bank of San Francisco	W. F. Berry, 424 California Street
Metson, Wm. H.	Milton Bernard, 501 Balboa Building
Miller & Lux, Inc.	Merchants Exchange Building
Nathan-Dohrmann Co.	P. B. C. Dohrmann, Stockton and Geary Streets
Pacific Gas & Electric Company	L. F. Walsh, 445 Sutter Street
Palmer Union Oil Co.	Geo. L. Walker, Crocker Building
Realty Syndicate, The	Oakland
Rollins, E. H., & Sons	D. H. Dibblee, First National Bank Building
Savings Union Bank & Trust Co.	John S. Drum, Grant Avenue and O'Farrell Streets
Sloss Bros.	Alaska Commercial Building
Standard Oil Co.	W. S. Rheem, 461 Market Street
Tillman & Bendel	Carl H. Schmidt, Pine and Davis Streets
United Railroads	Wells Fargo Building
Wells Fargo Nevada National Bank	Col. John P. Irish (Oakland)
Western Fuel Co.	James B. Smith, 430 California Street
M. F. Tarpey	Tarpey, Fresno County
Miles Standish	Crocker Building
Chester Rowell	Fresno
James Irvine	Crocker Building
Mark L. Requa	Crocker Building
Mortimer Fleishhacker	134 Fremont Street
A. L. Scott	Pacific Hardware & Steel Co.

HONORARY MEMBERS.

Hiram W. Johnson	Governor of California
A. L. Scott	President State Board of Agriculture, Sacramento
David Starr Jordan	President Leland Stantord, Jr., University, Palo Alto
Benjamin Ide Wheeler	President University of California, Berkeley
Luther Burbank	Santa Rosa
A. J. Cook	State Horticulturist, Sacramento
Judge N. P. Chipman	Sacramento
Col. John P. Irish	Oakland
E. W. Maslin	San Francisco
F. McN. Hamilton	State Mineralogist, San Francisco
J. A. Filcher	Sacramento
J. N. Gillett (Former President California Development Board)	Berkeley

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THE PANAMA-CALIFORNIA EXPOSITION

SAN DIEGO'S PANAMA-CALIFORNIA EXPOSITION was organized and incorporated in September, 1909.

The Exposition will open on January 1, 1915, and it will close on December 31st. The enterprise is completely organized, with U. S. Grant, Jr., as President and D. C. Collier as Director-General. There are two funds of \$1,000,000 each from which the expenditures will be made for buildings and maintenance. The first of these funds was raised by subscriptions of stockholders of the corporation, and the second was voted in bonds for the improvement of Balboa Park, which will be the site of the Mission City in which the Exposition will be held.

The Exposition itself will be novel in character, comprising a distinctive exhibition of ethnological, aboriginal and archaeological features peculiar to the countries included in the scope of the Exposition; a comprehensive demonstration of the great reclamation and irrigation projects of the Southwest and the arid regions of Mexico and a practical presentation of the handicrafts and industries of every section tributary to Southern California of which San Diego is the seaport destined to be the gateway of the Southwest when it shall be the first port of call in territory of the United States north of the Panama Canal and the terminal of the San Diego and Arizona Railway, closing the gap between Pacific tidewater and Yuma and connecting the transcontinental railroads with the shortest route between the Middle West and the new highway of commerce between the canal and the Orient.

CALIFORNIA THE PLAYGROUND

The Pacific Coast in 1913 celebrates the 400th anniversary of the discovery of the Pacific Ocean by Vasco Nunez de Balboa. This celebration centers at San Francisco, October 22-25, in the Portola Festival. This, an annual event, is one of the biggest things of the kind the entire West has ever seen.

At the 1913 Portola Festival there will be a fleet of United States war ships, and fighting craft of other nations. There will be parades without parallel, a carnival of sports greater than ever before attempted except at the Olympic Games, and four days of festivities without one single minute of cessation.

Out of this fete has grown a big idea. The formation of the California Celebration Committee, conceived by leaders in the Portola plans, heralds the development to the utmost of California's resources as a playground. This committee is co-ordinating festivals, spectacles, athletic events and native drama, throughout California and in the Northwest. The scope of the project includes the development of a series of holidays in every portion of the Pacific Coast, from Cabrillo Day in San Diego, to Portland's Rose Carnival, Seattle's Potlatch, and Tacoma's Montemaro Feste.

Motor and aviation races at Del Monte, Santa Barbara, Coronado and elsewhere; fiestas in the cities of Southern California, including the larger places as well as Los Angeles; the presentation of a series of open-air plays by Californian dramatists and actors; and the appearance of world-famous actors as, well, are a few of the features planned.

Nothing of equal scope has ever before been attempted, no such concerted action for the full development of the Pacific Coast as a holiday place has ever before been broached.

The consummation of this plan means that the tourist will have at his disposal a developed and unrivaled vacation region, appealing to him throughout the year, and the homeseeker will find in his newly adopted community conditions working for the fullest meaning of life in every sense.

California's shows include the National Orange Show at San Bernardino; the California Apple Annual at Watsonville, the Santa Cruz Water Carnival, the Gravenstein Apple Show at Sebastopol, the Petaluma Poultry Show, the Cloverdale Citrus Fair, the State Fair at Sacramento, the Santa Rosa Rose Carnival, the Tournament of Roses at Pasadena, Chico's Fiesta Arborea and the Christmas Carols of San Francisco.



CALIFORNIA

RESOURCES AND POSSIBILITIES



CALIFORNIA
WELCOMES THE WORLD
TO THE
EXPOSITION CITY
IN
1915

EXPOSITION CITY
1915

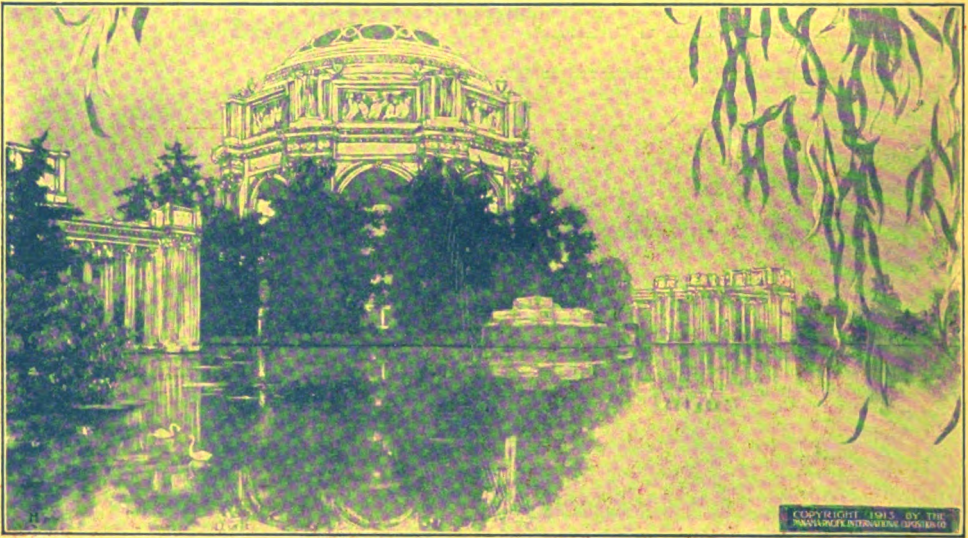
ANNUAL REPORT

CALIFORNIA DEVELOPMENT BOARD

SAN FRANCISCO CALIFORNIA - 1914

Panama-Pacific International Exposition

SAN FRANCISCO : FEBRUARY 20 TO DECEMBER 4, 1915



PROGRESS

One year before the date of opening eight of the great exhibit palaces are enclosed—namely, Varied Industries, Manufactures, Liberal Arts, Education and Social Economy, Food Products, Agriculture, Transportation, and Mines and Metallurgy. Machinery Hall, covering eight acres, is completed; Fine Arts and the lofty Tower of Jewels, 433 feet in height, are beginning to arise, under time contracts; the principal Groups of Statuary are ready to be placed; the splendid Mural Paintings are receiving the finishing touch of the artists; the ornate Colonnades are rapidly encircling the courts; and the surrounding Gardens are assuming an almost tropical luxuriance of flower and shrub. Magnificent and beautiful, even in its uncompleted state, the physical creation of the Panama-Pacific International Exposition, is visited by thousands who admire its splendor and wonder at the work accomplished. No other American International Exposition attained equal progress at a corresponding date; and **this one** will open on time.

PARTICIPATION

The States of the Union and Foreign Countries will be adequately represented, either by governmental appropriations, or by individual exhibitors in the leading industries, or by both. Exhibit space, in all but one of the Palaces, has already been over-subscribed, and the work of the Division becomes discriminative and selective. The systems of classification adopted have been reviewed by international authorities, and is intended to give greatest comparative advantage to visitors and competitive value to exhibitors. The purpose of the Departments is to make the exhibits comprise all the activities of man in the world of today; to make them comprehensive and selective of the latest and best in the sciences, arts, industries, and social and political economies, in their relation to the welfare of mankind; and in doing so, to emphasize, at the same time, the trend of invention and effort for the world's advancement. Industrial experts will find a vast assemblage of articles, illustrative by process and product, of all the principles involved in mechanical and economic progress and visitors may study in a world's university all that affects commerce, labor and the home.

SPECIAL FEATURES

The Exposition will surpass all others in some of its special features. Celebrating the opening of the Panama Canal, an event of importance to the trade of all the nations, it should have especial value to the commerce of the world, and return larger benefits to individual exhibitors. A spectacular event of international interest will be the pageant of warships in the harbor off the Exposition site, first assembling at Hampton Roads, then passing through the Canal, and finally casting anchor at San Francisco. Conventions and congresses, many of them international, to the number of 220, have voted to hold their 1915 meetings in the new Auditorium during the Exposition period. The color scheme provided for the Exposition Picture is a marvel of harmony and beauty, and will surpass all others ever designed. The electrical illumination will stand unrivalled for ingenuity, novelty, adequacy, brilliancy, and jewelled splendor. The Amusement Concessions will cost more, and have greater educational and entertainment value than ever before provided. The racing events, athletic contests, aeroplane and balloon exhibitions, musical festivals, military and naval drills and maneuvers will afford a round of exciting, interesting and improving entertainment that will not only show the latest progress but the most wonderful accomplishments of man.

CALIFORNIA INVITES YOU TO THE EXPOSITION CITY, 1915

CALIFORNIA

RESOURCES AND POSSIBILITIES

TWENTY-FOURTH ANNUAL REPORT

OF THE

California Development Board

FOR THE YEAR 1913

Submitted as of April, 1914

**PUBLISHED BY THE
CALIFORNIA DEVELOPMENT BOARD**

**OFFICE AND EXHIBITION HALL
Ferry Building, San Francisco
UPPER FLOOR**



Exhibit Hall California Development Board, Ferry Building, San Francisco.



TWENTY-FOURTH ANNUAL REPORT OF THE CALIFORNIA DEVELOPMENT BOARD

To the Members of the Board:

I have the honor to present herewith the twenty-fourth annual Statistical Report of the California Development Board. This report is the most complete record of the progress and production of the State of California which is published, and is the result of the work of one of the most important departments of the Board. Inasmuch as this report will be published in a very large edition for distribution over the world, the following statement is made as to the character and activities of the Board:

The Development Board is composed of official representatives appointed by the Boards of Supervisors of thirty-four counties of the State, together with one representative from active memberships in the Board. Active members consist of persons and firms subscribing more than \$15 per month to our work. Helpful affiliation is sustained with all of the commercial organizations of the State, and the Board co-operates closely with the Agricultural Department of the State University and with other official and public agencies.

The Board maintains at the Ferry Building, in San Francisco, an exhibit of horticultural, agricultural and viticultural products of the State, which is the finest of its kind. It maintains an Information Bureau, equipped with topographical and other maps of all the counties and sections of the State, together with a large body of accurate and scientific data on the resources of California. This data is collected under the supervision of the Board by its own field representatives, in co-operation with all other unprejudiced agencies gathering such information. The Board also maintains a Lecture Bureau, where lectures on California are given daily and official representatives of the various counties have opportunity of presenting their individual sections to those visiting our rooms. A large channel of distribution is provided for the literature of the various counties of the State. The organization is a clearing house for the State-wide activities of the commercial bodies.

The Board furnishes speakers and experienced advice to commercial organizations desiring assistance in their work and seeks to raise the efficiency of all voluntary organizations for commercial and agricultural development. An annual meeting of representatives of all the counties of the State is held each year at which State-wide problems are discussed.

During the year the Board has co-operated with many important movements, such as the Panama-Pacific and the Panama-California Expositions, the California Land Show, the California Immigration Commission, and acted on behalf of the State in creating and maintaining an exhibit at the Ghent International Exposition in Belgium. This exhibit was visited by six million people.

A detailed account of the activities of the Board is published in separate form, but the above sketch of our work is presented for the information of home-

seekers, investors and inquirers to whose hands this statistical report may come.

Correspondence is solicited from all who are interested in California or who desire to locate commercial, manufacturing or agricultural enterprises. All inquiries will be answered impartially and the fullest information obtainable will be gladly furnished. The Board has nothing to sell and does not represent any real estate or commercial enterprise. Its sole object in answering inquiries is to give such information that will enable homeseekers and investors to secure a thorough knowledge of the conditions in the localities in which they are interested.

ANNUAL STATISTICAL REPORT

GROWTH IN POPULATION AND DEVELOPMENT SINCE CALIFORNIA BECAME A STATE.
(U. S. Census Returns.)

Year	Population of State	No. farms	Average acres per farm	Average value of land and buildings per acre
1850.....	92,597	878	4,465.6	0.90
1860.....	379,994	18,716	466.4	5.58
1870.....	560,247	23,724	481.7	12.36
1880.....	864,694	35,934	461.8	15.79
1890.....	1,208,130	52,814	405.	32.53
1900.....	1,485,052	72,542	397.4	24.56
1910.....	2,377,549	88,197	316.7	51.93

Irrigation. Of the 88,197 farms in the State, 39,352, or 46.6 per cent were irrigated in 1909. The acreage reported as irrigated in 1909 was 2,664,104 acres, or 23.4 per cent of the improved land in farms. The area to which enterprises existing in 1910 were capable of supplying water was 3,619,378 acres, and the total acreage included in irrigation projects, complete or under way, in 1910 was 5,490,360 acres. A revised statement of the status of irrigation in California in 1912 is given in the special article on "Irrigated Agriculture" in the back of the report.

POPULATION, NUMBER OF FARMS AND FARM ACREAGE.

Census year	Population	Farms		Land in farms		Per cent of land area in farms	Per cent of farm land improved
		Number	Per cent of increase	Acres	Improved land (acres)		
1910.....	2,377,549	88,197	21.6	27,931,444	11,389,894	28.0	40.8
1900.....	1,485,053	72,542	37.1	28,828,951	11,958,837	28.9	41.5
1890.....	1,213,398	52,894	47.2	21,427,293	12,222,839	21.5	57.0
1880.....	864,694	35,934	51.5	16,593,742	10,669,698	16.7	64.3
1870.....	560,247	23,724	26.8	11,427,105	6,218,133	11.5	54.4
1860.....	379,994	18,716	2,046.3	8,730,034	2,468,034	8.8	28.3
1850.....	92,597	872	.....	3,893,985	32,454	3.9	0.8

FARM OPERATORS.

Color and nativity	Total		Owners	Tenants	Managers	Per cent of total		
	Number	Per cent distribution				Owners	Tenants	Managers
Native white	58,926	66.8	45,780	10,505	2,641	77.7	17.8	4.5
Foreign-born white.	26,193	29.7	19,914	5,565	714	76.0	21.2	2.7
Negro and other non-white.....	3,078	3.5	938	2,073	62	30.5	67.5	2.0
Total.....	88,197	100.0	66,632	18,148	3,417	75.5	20.6	3.9

DENSITY OF POPULATION

In 1900, twenty States ranked ahead of California in population. In 1910, but eleven stood before her. In the ten-year period she had outstripped nine of them, taking twelfth place.

The density of the population is still but 15.2 persons to the square mile.

LIST OF COUNTIES IN CALIFORNIA.

With population of each in 1910, per U. S. Census, with percentage of increase or decrease of each; also population **estimated** as of December 31, 1913, and land area of each county.

Counties	Land Area in Square Miles, 1910	Population 1910 U. S. Census	Per cent of Increase 1900-10	Population Dec., 1913 (est. by Board of Supervisors each County)
Alameda	732	246,131	89.0	285,000
Alpine	776	309	—39.3	309
Amador	601	9,086	—18.3	10,000
Butte	1,722	27,301	59.5	30,000
Calaveras	1,027	9,171	—18.1	10,000
Colusa	1,140	7,732	5.0	8,500
Contra Costa	714	31,674	75.5	42,500
Del Norte	1,024	2,417	0.4	2,417†
El Dorado	1,753	7,492	—16.6	7,500
Fresno	5,950	75,657	99.8	100,000
Glenn	1,259	7,172	39.3	9,000
Humboldt	3,634	33,857	24.9	37,000 (C of C)
Imperial	4,089	13,591	....	30,000
Inyo	10,019	6,974	59.3	6,974†
Kern	8,003	37,715	128.9	55,000
Kings	1,159	16,230	64.4	18,500
Lake	1,278	5,526	—8.2	5,526
Lassen	4,531	4,802	6.5	7,000
Los Angeles	4,067	504,131	196.0	800,000 (C of C)
Madera	2,112	8,368	31.5	15,000 (C of C)
Marin	529	25,114	59.9	26,000
Mariposa	1,463	3,956	—16.2	4,000
Mendocino	3,453	23,929	16.9	25,000
Merced	1,995	15,148	64.4	20,000
Modoc	3,823	6,191	22.0	7,000
Mono	3,030	2,843	5.8	2,042
Monterey	3,330	24,146	24.6	24,146†
Napa	783	19,800	20.4	21,000
Nevada	974	14,955	—15.9	15,000
Orange	795	34,436	74.8	42,500
*Placer	1,395	18,237	15.5	18,237
Plumas	2,594	5,259	12.9	6,000
Riverside	7,240	34,696	93.9	38,000
Sacramento	983	67,806	47.7	90,000 (C of C)
San Benito	1,392	8,041	21.2	8,400
San Bernardino	20,157	56,706	103.0	75,000
San Diego	4,221	61,665	75.7	140,000 (C of C)
San Francisco	43	416,912	21.6	560,582 (C of C)
San Joaquin	1,448	50,731	43.1	50,731†
San Luis Obispo	3,334	19,383	16.5	24,000
San Mateo	447	26,585	119.8	37,500
Santa Barbara	2,740	27,738	46.5	32,500
Santa Clara	1,328	83,539	38.7	97,039 (C of C)
Santa Cruz	435	26,140	21.5	29,000
Shasta	3,858	18,920	9.3	20,000
**Sierra	923	4,098	2.0	4,098
Siskiyou	6,256	18,800	10.8	24,000
Solano	822	27,559	14.1	29,080 (Exp. Com.)
Sonoma	1,577	48,394	25.8	52,500
Stanislaus	1,450	22,522	135.8	35,000
Sutter	608	6,328	7.5	7,000
Tehama	2,893	11,401	3.7	12,775
Trinity	3,166	3,301	—24.7	3,300
Tulare	4,856	35,440	92.9	37,500
Tuolumne	2,190	9,979	—10.6	10,000
Ventura	1,878	18,347	27.7	20,000
Yolo	1,014	13,926	2.3	15,000
Yuba	639	10,042	16.5	11,500
California	155,652	2,377,549	60.1	3,155,656

*Does not show increase, as in 1910 there were a large number of men in the county engaged in construction work, who have since departed.

**Population the same, as many miners and lumbermen live in the county as long in each year as they can obtain work.

C of C—Chamber of Commerce.

†No estimate received; 1910 census figures used.

SUMMARY OF THE STATE.

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Bay counties	925,708	658,156	40.6	7,108	130.2	37.6
South of Tehachapi	751,310	304,209	146.9	45,102	16.6	9.9
Sacramento Valley	153,708	114,656	34.6	10,280	14.9	3.8
San Joaquin Valley	261,811	143,179	80.2	27,176	9.7	4.4
Rest of the State	285,012	264,853	7.6	66,506	4.2	.4
	2,377,549	1,485,053	60.1	156,172	15.2	5.7

This segregation shows that the greatest gain per square mile has been in the counties about San Francisco Bay, while the greatest aggregate gain and the greatest rate of increase has been south of the Tehachapi.

Of the two great interior valleys, the San Joaquin Valley has made the greatest aggregate gain, 118,632, and the greatest gain per cent, 80.2; while the Sacramento Valley made an aggregate gain of 39,042, and a gain per cent of 34.6.

The remaining counties of the State, twenty-five in number, show an aggregate gain of 20,159, and a net gain of 7.6 per cent.

Irrigation, the development of agricultural lands, and the development of bountiful oil fields of the State, have been the main factors in attracting home-seekers and investors.

Class of places	Population		Increase 1900 to 1910	
	1910	1900	Number	Per cent
The State	2,377,549	1,485,053	892,496	60.1
Urban territory	1,469,739	810,193	659,546	81.4
Cities and towns of—				
100,000 inhabitants or more	886,284	514,008	372,276	72.4
25,000 to 100,000 inhabitants	183,945	90,813	93,132	102.6
2,500 to 25,000 inhabitants	399,510	205,372	194,138	94.5
Remainder of the State	907,810	675,860	232,950	34.5

The following table gives the population of cities in California over 5,000 inhabitants in 1910 according to the U. S. Census, with comparisons for 1900:

Cities	Population 1900 U. S. Census	Population 1910 U. S. Census
Alameda	16,464	23,383
Alhambra .....	.....	5,021
Bakersfield	4,836	12,727
Berkeley	13,214	40,434
Eureka	7,327	11,845
Fresno	12,470	24,892
Long Beach	2,252	17,809
Los Angeles	102,479	319,198
Marysville	3,497	5,430
Napa	4,036	5,791
Oakland	66,960	150,174
Pasadena	9,117	30,291
Petaluma	3,871	5,880
Pomona	5,526	10,207
Redlands	4,797	10,446
Richmond .....	.....	6,802
Riverside	7,973	15,212
Sacramento	29,282	44,696
San Bernardino	6,150	12,779
San Diego	17,770	39,578
San Francisco	342,782	416,912

GAIN ON THE PACIFIC SLOPE

7

Cities	Population 1910	Population 1910
	U. S. Census	U. S. Census
San Jose	21,500	28,946
San Luis Obispo	3,021	5,157
San Rafael	3,789	5,934
Santa Ana	4,933	8,429
Santa Barbara	6,587	11,659
Santa Cruz	5,659	11,146
Santa Monica	3,057	7,847
Santa Rosa	6,673	7,817
Stockton	17,506	23,253
Vallejo	7,965	11,340
Total for above cities	739,513	1,314,037

THE GAIN ON THE PACIFIC SLOPE

While the gain in population for the whole of the Continental United States was 15,977,691, an increase of 21 per cent, the eleven States of the Pacific Slope, as given in the table below, show an aggregate increase of 2,734,567, an increase of 66.8 per cent.

The combined area is 1,175,742 square miles, which makes an average population per square mile of 5.8 per cent, while the average population per square mile for the Continental United States is 30.9 persons.

PACIFIC SLOPE STATES

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Montana	376,053	243,329	54.5	145,310	2.6	.9
Wyoming	145,965	92,531	56.8	97,575	1.5	.6
Colorado	799,024	539,700	48	103,645	7.5	2.3
New Mexico	327,396	195,300	67.6	122,460	2.7	1.1
Arizona	204,354	122,931	66.2	112,920	1.8	.7
Utah	373,351	276,749	34.9	82,190	4.5	1.1
Nevada	81,875	42,335	93.4	109,740	.8	.4
Idaho	325,594	161,772	101.3	84,290	3.9	2
Washington	1,141,990	518,103	120.4	66,880	17	9.3
Oregon	672,765	413,536	62.7	94,560	7.1	2.7
California	2,377,549	1,485,053	60.1	156,172	15.2	2.7
Total	6,825,916	4,091,349	66.8	1,175,742	5.8	2.4

Expansion of Agricultural Industries. The development of the agricultural resources of the State is exhibited in the following tables, comparing the acreage sown to certain crops in 1862 with those of 1910:

	1862 Agr. report acres	1910 Census report acres
Indian corn	17,339	51,935
Wheat	361,351	478,637
Rye	1,415	7,027
Oats	36,607	192,158
Barley	223,217	1,195,158
Hay and forage	250,464	2,049,213
Potatoes	3,624	72,799
Total	914,788	4,046,927
Add acreage of following not mentioned in report 1862:		
Hops		8,391
Celery		5,600
Beans		157,825
Standing alfalfa		487,134
Cotton		15,000
Sugar beets		101,000
Kaffir corn, mustard seed, etc.		50,194
		825,144
		4,872,071

Besides this increase in acreage of the staple crops, California had, according to the report of the State Board of Equalization, vines and fruit trees as follows, bearing and not bearing, in 1910:

VINEYARDS

	Acres
Table grapes	53,729
Raisin grapes	128,217
Wine grapes	160,573

ORCHARDS

Deciduous fruits—	No. of trees	Citrus fruits—	No. of trees
Apple	2,143,815	Orange	10,803,221
Apricot	2,593,884	Lemon	1,810,616
Cherry	601,520	Pomelo	18,886
Fig	549,875	Lime	1,716
Nectarine	63,773		
Olive	1,190,452	Total	12,634,439
Peach	10,922,994	Nuts—	
Pear	1,499,932	Almond	1,204,382
Plum	1,059,453	Walnut	891,147
Prune	8,998,831		
Total	19,624,529	Total	2,095,529

Grand total in 1909-10

34,354,497

There has been much new planting since the census, especially of peaches, almonds and olives,—also of oranges in Northern and Central California. The losses by the severe weather of last year in Southern California have been made good, and much additional planting besides. The new plantings will easily bring the total deciduous and citrus fruit and nut trees up to 38,000,000.

FINANCIAL CONDITIONS IN CALIFORNIA

San Francisco is the financial center of the Pacific Coast. On June 4, 1913, the latest date for which complete figures are available, the principal items of the resources and liabilities of the banks of the City and State of California were as follows:

CAPITAL, SURPLUS AND UNDIVIDED PROFITS.

	San Francisco	California
National banks	\$50,439,501.89	\$98,305,279.52
State commercial and trust	15,968,097.57	55,556,794.41
Savings banks	17,988,665.20	50,168,847.65
Totals	\$84,396,264.66	\$204,030,921.58

INDIVIDUAL DEPOSITS.

	San Francisco	California
National banks	\$88,736,533.51	\$257,622,487.70
State commercial and trust	36,643,097.26	131,416,895.51
Total commercial	\$125,379,630.77	\$389,039,383.21
Savings banks	185,233,054.95	430,504,798.85

LOANS AND DISCOUNTS, INCLUDING OVERDRAFTS.

	San Francisco	California
National banks	\$117,701,180.58	\$273,503,128.74
State commercial and trust	35,693,038.51	123,036,877.86
Total commercial	\$153,394,219.09	\$396,540,006.60
Savings banks	128,508,323.70	335,358,103.19

RESOURCES.

	San Francisco	California
National banks	\$224,719,104.75	\$497,916,655.87
State commercial and trust	66,084,391.51	214,152,099.11
Savings banks	204,801,089.68	491,719,242.69
Totals	\$495,604,585.94	\$1,203,787,997.67

There were in existence at that time in the State 252 national banks, 152 State commercial and trust, 136 savings banks and 180 "departmental banks," meaning banks doing both commercial and savings business. They are called departmental

banks for the reason that the laws of this State, while permitting banks to do both commercial and savings business, require a complete segregation of the two lines of business, including a physical separation of assets, so that the failure of one department does not necessarily impair the solvency of the other.

The following, from the Report of the Superintendent of Banks of California, is of interest:

Substantial increases in assets, deposits, capital paid in, cash in banks, surplus, and in loans and discounts and a marked decrease in money borrowed by State Banks, reflects significantly conditions of health and prosperity in the State system. These facts, with the exception of borrowed money, are tabulated as follows:

	1911-12	1912-13	Increase
Assets	\$666,998,510.30	\$705,817,341.80	\$38,872,831.50
Loans and discounts	416,634,278.72	458,397,609.31	41,763,330.59
Cash in banks	24,199,035.45	26,934,808.68	2,735,773.23
Capital	60,675,195.33	62,668,893.96	1,993,698.63
Surplus	26,315,612.49	27,785,528.11	1,469,915.62
Undivided profits	14,758,701.59	15,271,219.99	512,518.40
Individual deposits	532,951,777.00	561,921,694.36	28,969,917.36

At the close of the fiscal year June 30, 1912, the banks of this State had an aggregate of \$2,370,989.73 borrowed money; at the close of the fiscal year June 30, 1913, the aggregate was \$1,560,227.92, showing a decrease of \$810,741.81.

The report also states that during the fiscal year which ended June 30, 1913, the banks of the State, taken as a whole and representative of the manifold industries of California, enjoyed prosperity. Thirty-three new banking institutions opened for business. The coming of new banks was responsive to popular locality demands for banking facilities.

Clearing House Exhibits. The bank clearings of San Francisco have more than doubled since 1900. Los Angeles, the other large financial center of the State, while showing a smaller aggregate, has a larger proportionate increase.

The San Francisco Clearing House was organized May, 1876. The clearings for the 8 2-3 months of that year were \$476,125,237.97.

In 1890 they were \$851,066,172.90.

In 1900 they were \$1,029,582,574.78. In 1913 they were \$2,624,428,824.74.

In the 38 years of its existence the total amount of clearings has been \$43,088,115,985.87. The average daily clearings increased from \$1,927,624 in 1876 to \$8,895,554.66 in 1912.

The gain in volume of clearing house business for 1912 over 1911 was 10.32 per cent, which strongly reflects the increase in the mineral and agricultural products and the increase in the amount of exports and imports over 1911, as well as the sales of real estate and the building operations of the city.

Other cities of California show an increase that indicates the marvelous development of the State in the time.

The record of clearings in the two principal cities in the past twelve years is as follows:

SAN FRANCISCO.		LOS ANGELES.	
Year.	Clearings.	Year.	Clearings.
1902	\$1,373,362,025.31	1902	\$ 245,516,094.85
1903	1,520,200,682.07	1903	307,316,530.90
1904	1,534,631,136.73	1904	345,343,956.35
1905	1,834,549,788.51	1905	478,985,298.40
1906	1,998,400,779.06	1906	578,635,516.82
1907	2,133,882,625.80	1907	581,803,982.00
1908	1,757,151,850.08	1908	505,588,756.02
1909	1,979,872,570.06	1909	673,165,728.81
1910	2,323,772,870.99	1910	811,377,487.47
1911	2,427,075,543.46	1911	942,914,424.19
1912	2,677,561,952.27	1912	1,168,941,700.02
1913	2,624,428,824.74	1913	1,211,167,980.18

The total clearings for the United States for 1912 showed an increase as compared with 1911 of but 9 per cent, San Francisco had an increase of over 10 per cent and Los Angeles of over 23 per cent. For 1912 San Francisco was eighth in the list of clearing and Los Angeles twelfth. In 1913 San Francisco held her rank of eighth on the list and Los Angeles was fourteenth.

CALIFORNIA DEVELOPMENT BOARD

In San Francisco government checks have been paid by national banks instead of by the sub-treasury since February, 1913. It is estimated that this will account for some \$20,000,000 of the apparent decrease between the clearings of 1912 and 1913.

OTHER CLEARING HOUSE CITIES

	1909	1910	1911	1912	1913
Oakland	\$96,527,088.09	\$157,460,588.22	\$172,666,406.17	\$222,570,346.29	\$188,730,763.00
Sacramento	54,512,723.22	69,447,281.94	78,376,700.21	92,747,060.69	108,268,688.39
San Diego	52,094,521.00	66,708,874.00	82,724,333.47	131,894,087.00	134,145,293.00
Fresno	29,324,258.30	37,930,473.07	39,782,776.05	51,400,594.73	57,384,801.12
Stockton	28,195,022.20	32,277,582.58	40,356,582.58	45,064,374.68	45,925,831.09
San Jose	25,320,894.50	27,828,978.64	29,877,754.37	35,882,473.55	35,730,898.59
Pasadena (with Los Angeles) . .	40,570,318.90	41,607,900.10	47,144,736.48	47,818,722.51	47,818,722.51
Bakersfield (organized in March, 1912)				21,500,000.00	23,656,106.08

FEDERAL BUSINESS IN SAN FRANCISCO FOR 1913.

Postal receipts	\$3,116,944.29	Imports, total valuation	\$62,650,298.00
Custom receipts, including Oakland	6,421,062.54	Exports, domestic	69,670,853.00
Postal savings deposits	1,057,802.00	Exports, foreign merchandise	1,159,041.00
Internal revenue receipts	8,456,243.12	Shipments to non-contiguous territory, value of	23,357,894.00
Tonnage movement during 1913, 7,434,939 tons (handled over State wharves).			

The commerce of the port reached nearly every country in the world, as shown by the following statement prepared by the Foreign Trade Department of the San Francisco Chamber of Commerce:

RESUME OF THE FOREIGN TRADE OF SAN FRANCISCO HARBOR FOR 1913, AS COMPARED WITH THAT OF 1912.

Figures secured from the U. S. Custom House.

IMPORTS.

For 1912 the imports amounted to \$62,744,188, while in 1913 they were \$62,650,298, or a decrease of \$93,890.

EXPORTS.

For 1912 the exports were \$54,707,850 and for 1913 they were \$69,670,853, an increase of \$14,963,003, or over 27 per cent.

While the exports to some foreign countries showed a decrease in the majority of cases they showed an increase and below is given a statement of the principal countries and the commodities that went to make up the principal increases to each:

Austria-Hungary: Increase, \$6,732. Principal increases were in coffee and canned fruit.

France: Increase, \$367,310. Seeds, drugs, prunes, canned fruit, dried peaches and nuts.

Netherlands: Increase, \$144,619. Tallow, scrap copper, dried apricots, prunes, canned fruit and vegetables.

Spain: Increase, \$46,909. Agricultural implements.

Switzerland: Increase, \$21,323. Canned fruit and wine.

England: Increase, \$1,690,227. Canned salmon, canned fruit and vegetables, pencil wood, hops and lumber.

Cuba: Increase, \$33,721. Canned fruit and vegetables, prunes and beans.

Canada: Increase, \$217,907. Drugs, cotton manufactures, electric appliances, machinery, engines, glass manufactures, oil, lemons and naptha.

Bolivia: Increase, \$9,107. Machinery.

Uruguay: Increase, \$2,500. Canned fruit and prunes.

Chile: Increase, \$741,341. Flour, machinery, iron manufactures, oil, lumber and babbitt metal.

Peru: Increase, \$105,699. Cotton wearing apparel, machinery, electric appliances, boots and shoes, motor boats, oil, shoos, lumber and ties.

Korea: Increase, \$14,442. Sole and other leather, electric appliances, condensed milk and locomotives.

Australia and Tasmania: Increase, \$747,088. Rubber hose, auto tires, electric appliances, tools, iron manufactures, engines, cotton wearing apparel, books, metal polish, wood, lubricating oil, lumber (doubled), picture films, automobiles, candy, fresh apples (from \$43,000 to \$157,000), dried apples, apricots, peaches, prunes, boots and shoes, salt, corsets, clocks, etc.

French Oceania: Increase, \$184,143. Flour, bread, cotton manufactures, automobiles, canned salmon, cordage, boots and shoes, naptha, wine, engines and unbleached cotton.

Japanese China: Increase \$14,103. Condensed milk, agricultural implements, electric appliances and boots and shoes.

Hongkong: Increase, \$145,936. Flour, engines, salt fish, seaweed, films, babbitt metal, condensed milk, fresh apples, coal oil and lumber.

Japan: Increase, \$9,472,049. Flour, drugs, cotton, cotton manufactures, machinery, iron manufactures, mining machinery (from \$200,000 to \$540,000), pipe, automobiles, raisins, pa-

per, wine, wood manufactures, lumber, rags, starch, leaf tobacco, hides, salt fish, engines, rosin, barley, steel plates.

British India: Increase, \$244,289. Canned fruit and vegetables, roofing felt, paint, machinery, coal oil.

China: Increase, \$1,367,984. Flour, table preparations, drugs, machinery, electrical appliances, iron manufactures, auto tires, condensed milk, canned meat and vegetables, boots and shoes, sole leather, books, printing ink, coal oil, barrel shooks, cigarettes (from \$110,000 to \$609,000), wine and paint.

Philippine Islands: Increase, \$1,290,859. Flour, electric appliances, machinery, iron manufactures, engines, auto parts, rubber hose, bicycles, automobiles (from \$65,000 to \$417,000), carriages, canned salmon, fire arms, bar and sheet steel, photo supplies, cartridges and saddlery, also canned vegetables, sugar and cotton yarn.

Dutch East Indies: Increase, \$153,620. Coal oil, canned salmon and carriages.

Siam: Increase, \$3,804. Roofing felt, paper and table preparations.

Portuguese Africa: Increase, \$14,858. Lumber.

It will be noticed there is a steady increase in canned and dried fruits into Europe and with the opening of the canal undoubtedly a greater increase will be seen, together with shipments of fresh fruits. San Francisco is gradually getting a foothold in Cuba, Jamaica and other West Indian ports, and should secure quite a share of the trade with direct service via the canal. Into the West Coast of South America is being introduced machinery, iron manufactures, electric appliances, oil and clothing, lumber has always been imported from here. Into the Orient is being introduced machinery, electrical appliances, cotton manufactures and foodstuffs. California fresh apples are being exported to Australia, one of the largest apple producing countries, as well as dried fruits and manufactures of many kinds. Notwithstanding the handicap in shipping to India at present by having no direct service, San Francisco is rapidly securing a share of the trade and the entering wedge is widening. While \$341,229 is not a very large share of India's imports, yet it is encouraging to note that it is \$244,289, or over 250 per cent, more than last year, and with direct service after the canal is open and the many inquiries being received and the interest taken by Indian importers, this should become a very valuable traffic. French Oceania, comprising a few islands in the Pacific, is very near the million-dollar mark and undoubtedly a large trade could be worked up in the Society, Fiji, Samoan, Mariana and other Pacific Ocean groups when adequate service is put on.

Portuguese Africa has let the wedge enter and South Africa is becoming very much interested and there is preliminary talk of a direct service through the canal touching at West Indian and Venezuelan ports.

The prospects for a greatly increased and constantly increasing commerce to and from San Francisco Harbor are beyond any question of doubt.

COMMERCIAL MOVEMENTS BY SEA AT OTHER PORTS IN CALIFORNIA FOR 1913.

	Imports	Exports
Humboldt	\$6,211,100	\$10,565,220
Los Angeles	2,909,241	395,048

In the exports for Humboldt, \$6,820,800 represent lumber exports. (Figures furnished by the Humboldt Chamber of Commerce.)

Four other ports are included in the Los Angeles district, for which the following figures for the last six months of 1913, as reported by the Customs Service and Board of Harbor Commissioners, are given:

	Imports	Exports
San Diego	\$372,571	\$205,552
Calexico	572,185	181,156
Tia Juana	8,661	109,295
Campo	14,888	17,561

PROGRESS IN THE METROPOLIS

The eighth anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.

San Francisco has won the admiration and wonder of the world by the courage and energy of her rebuilding, and stands today more fit than ever to occupy her proper place among the great cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represented sixty one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of her people has been justified and the promise of greater prosperity for the future is hers.

To this prosperity the whole State contributes and in it shares.

San Francisco can now claim to be, in character and equipment of her new structures, the most up-to-date city in the world. She is authorized by the Federal Government to invite the nations of the world to come and see for themselves when she opens the **Panama-Pacific International Exposition in 1915**, which enterprise was inaugurated in the presence of a vast multitude in Golden Gate Park, October 14, 1911, by the turning of the first shovelful of earth by Wm. H. Taft, President of the United States.

RECONSTRUCTION OF SAN FRANCISCO

The reconstruction of the city involved vast expenditures by the municipality for streets, sewers, fire system, school houses and other municipal buildings, all of which has been of the most substantial character.

Private Construction. The buildings destroyed in San Francisco by the fire of 1906 numbered 28,188 valued at \$105,000,000. The money expended by private parties for labor on the new buildings has amounted to some \$100,000,000, while the municipality has expended large sums on the same account.

The private construction as shown by the official permits issued, gives the record as follows, up to December 31, 1911.

	Number Buildings	April, 1906, to Dec. 31, 1910 Cost	1911 Cost
Class A	117	\$ 24,927,260	\$ 1,809,097
Class B	135	9,256,871	1,010,500
Class C	1,830	55,835,617	8,145,673
Frames	16,951	67,965,376	8,345,956
Alterations	11,280	18,897,080	1,604,248
Total	30,316	\$176,882,204	\$20,915,474
For 1911	6,079	20,915,474	
Grand total	36,395	\$197,797,678	
Add 15 per cent for under valuation		29,669,650	
		\$227,467,328	

The city shows for itself as to the character of buildings erected up to the end of 1911 and the above figures give some of the details.

For 1912 permits were issued for buildings to cost \$23,338,563.00. Contracts for the same were let and recorded as follows:

Brick	\$14,246,796
Frame	9,826,927
Alterations	2,195,283
Total for 1912	\$26,269,006

In 1913 permits were issued for 5,606 buildings.

	No.	Cost
Class A	21	\$4,037,543
Class B	23	1,437,138
Class C	235	6,561,936
Frames	2,131	7,242,271
Alterations	3,196	1,758,376
	5,606 bldg.	\$21,037,264

These include private construction alone.

Adding to the above the permit figures for State, Municipal, Federal and Exposition Buildings, makes the total for the year, 1913, \$32,797,259.

San Francisco, always famous for its hostelrys, is now credited with being one of the greatest hotel cities in the world. Fully 98 per cent of its hotels and

apartment houses have been built within the last seven years and they are nearly all thoroughly modern and up-to-date.

By official tabulation there are over 1,222 hotels and rooming houses, which, with the 515 apartment houses, represents a total of over 80,000 rooms, with accommodations for over 150,000 guests at any one time. In process of construction there are over 150 hotels and apartment houses that will be completed before the Exposition opens in 1915 giving nearly 3,000 rooms more, and in addition there are hundreds of flats and rooms obtainable in private residences. San Francisco is well equipped to care for the multitudes that will be attracted to the Panama-Pacific International Exposition in 1915.

With the purpose of making it as easy as possible for prospective visitors to secure accommodations and at guaranteed rates, the hotel men of the city have incorporated the San Francisco Hotel Bureau with a membership of over 300 hotels, rooming and apartment houses, representing 50,000 rooms. Its offices are located in the Flannery Building, Kearny and Market Streets. There are no fees or other charges connected with the making of reservations through this Bureau.

BUILDING ACTIVITIES THROUGHOUT THE STATE

The growth of building activities all over the State has been greatly stimulated by the publicity given to California by San Francisco's mishap and her reconstruction, as the following exhibit for Los Angeles, Oakland, and other leading cities of the State shows:

Valuation.			Valuation.		
Los Angeles	1905	\$15,382,057	Sacramento..	1906	\$ 994,811
	1909	13,260,703		1909	2,063,394
	1910	21,684,100		1910	2,164,456
	1911	23,004,185		1911	3,087,392
	1912	31,367,995		1912	2,793,544
Oakland.....	1913	31,641,921	Pasadena....	1913	3,416,057
	1906	4,445,692		1905	1,953,532
	1909	5,318,512		1909	1,888,826
	1910	6,695,789		1910	2,133,528
	1911	6,202,685		1911	2,183,713
San Diego.....	1912	9,009,734	San Jose.....	1912	2,166,352
	1913	9,106,191		1913	2,787,507
	1905	1,193,170		1905	908,525
	1909	2,632,100		1909	1,195,280
	1910	4,005,200		1910	1,750,000
Stockton	1911	5,703,685	Fresno.....	1911	569,369
	1912	10,001,004		1912	857,166
	1913	7,035,797		1913	485,006
	1906	488,372		1907	129,880
	1909	565,195		1909	332,897
Bakersfield...	1910	506,494	Bakersfield...	1910	990,040
	1911	938,857		1911	1,075,941
	1912	1,129,170		1912	1,697,294
	1913	946,273		1913	1,776,666
				1913	760,744

Harbor Improvements for San Francisco Bay.

The improvements to San Francisco Harbor, made possible by the \$2,000,000 State bond issue of 1904, have been augmented by the State bonds authorized in 1910 to the amount of \$9,000,000, which have all been sold. At the same time \$1,000,000 bonds were voted for the acquisition of Islais Creek lands for an island basin.

San Francisco has the second largest land-locked harbor in the world, being exceeded only by that of Rio de Janeiro, Brazil. It is 65 miles long and from 4 to 10 miles wide; area about 450 square miles; shore line, 231 miles, with room for the navies of the world. Its entrance is the Golden Gate, which is a mile wide at the narrowest point, and through which pass the waters of the great valleys of California to the ocean. Typhoons and hurricanes are unknown, and the great-

est Pacific liners dock without difficulty in any weather and at all stages of the tide. The only transport docks owned by the United States are at San Francisco.

By the time of the opening of the Panama-Pacific International Exposition in 1915, the extensions and improvements under the bond issue will be completed, giving San Francisco a wharfage line of 44.5 miles not including Channel Creek and the three basins. Five new concrete docks were added in 1913, and twelve others are under way. When all are completed the berthing space will be about 70,000 lineal feet. San Francisco has two graving docks and four floating docks. One graving dock is 750 feet long and 82 wide, and admits vessels of the largest size. A belt road connecting the piers with the transcontinental railway lines furnishes ideal facilities for handling the commerce of the port and the present plans provide for its extension.

San Francisco deservedly ranks as one of the great cities of the world. She is a great city by reason of her position and power in the social, commercial and financial world. San Francisco is pre-eminently a commercial city. It is a foreign and domestic market without a peer on the Pacific Coast. The city has all the advantages of location possessed by any of the great commercial centers of the world. It is situated on the north end of a peninsula, six miles wide and twenty miles long, separating San Francisco Bay from the Pacific Ocean.

As a seaport it receives the commercial drainage of a region that has the greatest variety of natural resources of any part of the earth. That drainage is the great inextinguishable, economic fact that rebuilt San Francisco after the catastrophe of 1906 on greater lines than before. It was economic pressure that forced and inspired the energies which have made a new city that is the wonder of the world.

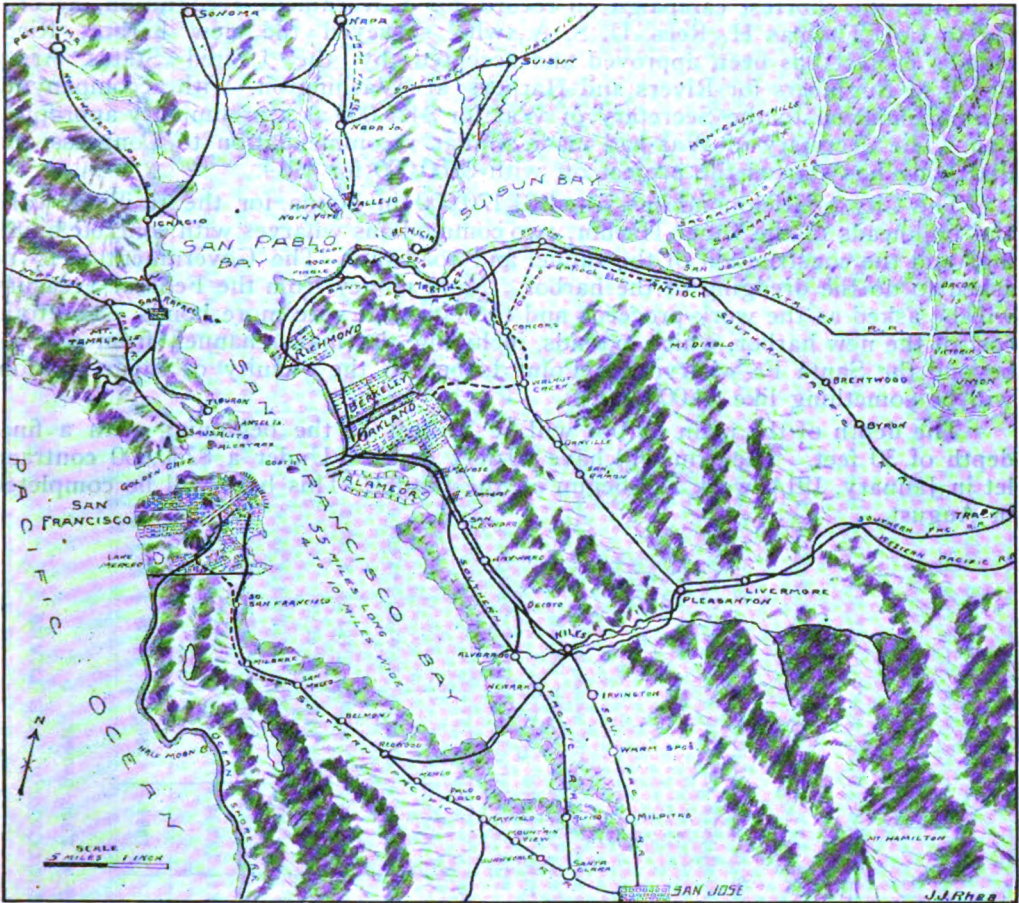
Oakland Harbor. The great seaport of Pacific America, with constantly expanding commerce demands ever-widening facilities for handling it. Fortunately this demand is being met by San Francisco and Oakland, the two great cities of the bay region. Formerly there was danger that much of our commerce would be alienated by the lack of adequate port and dock facilities. This risk is no longer imminent. The San Francisco Harbor Commissioners, watchful of the needs of trade, are wisely expanding its facilities on the water front within their jurisdiction. But when they have done all within their power, the expansion of commerce will not stop, and to meet it Oakland is wisely and watchfully moving to develop her splendid water front to secure deep water to accommodate the largest ships and to meet commerce by water and rail facilities that will give trade a line of least resistance.

The Oakland water front is a great asset of the Pacific trade, and its improvement now planned and in progress means that the commerce of all times is to have on San Francisco Bay every advantage that natural situation justifies and that enlightened public enterprise can supply.

This work has included the deepening of the channel in the estuary by the Federal Government, the Congressional appropriation for the year, \$175,000 being used for that purpose. Work on dredging slips, building wharves and providing deep water approaches to these wharves, has been done by the Santa Fe and Southern Pacific Railway Companies, by the Oakland Municipal Government and by a number of firms and corporations holding grants from the city on the water front.

The Municipal Government has gone ahead with improvement of the 2,900 feet frontage on the estuary along which the concrete quay wall was finished during the year, and has also done reclamation and wharf building work on the frontier of the west water front known as the Key Route Basin.

For the further prosecution of this harbor work the city has remaining approximately a half million dollars voted for this purpose, and this sum is estimated to be sufficient to bring into use in a few months a considerable portion of the frontage included in the present improvement district.



San Francisco Bay and Vicinity.

There has been a great deal of work done in improving the land approaches to these new wharves both by the Municipality and by other occupants of the water front. The total expenditure for these purposes has run into millions.

The formulation and endorsement of the plans prepared by Lieutenant Colonel Thomas H. Rees, for a continuous deep water channel along the east bay shore from the Oakland Mole to Point Richmond, has been perhaps of as great importance as the actual construction work.

Hereafter, then, there need be no fear that any ship, however great her tonnage or deep her draught, will fail of accommodation in this bay, or that any cargo, in or out, will lack the latest and most economical device for handling and transfer. The same spirit is upon both cities, not in rivalry, but with the determination that this seaport, intended by nature to be one of the world's greatest, shall by art and enterprise fulfill its destiny.

Richmond The City of Richmond, eight miles across the bay from San Francisco, in Contra Costa County, is carrying out a harbor development project of striking magnitude and importance for a city that has been incorporated but eight years and is only twelve years on the map.

The project consists of an Inner Harbor with a channel to deep water, a projecting arm and a tunnel and roadway through the rim of hills skirting the natural deep water frontage of the city, the tunnel and road to connect with a wharf 740 feet long at the outer end of the harbor channel and provide immediate use of this much of the new project while the rest is under construction.

After the shortest campaign on record for Government recognition, according to Col. Thomas H. Rees, U. S. A., who surveyed the new harbor, Richmond's project has been approved and accepted by the United States Army Board of Engineers for Rivers and Harbors at Washington, with accompanying recommendation to the Secretary of War for \$425,000 as a preliminary appropriation. The Secretary of War had made similar recommendation to Congress and that body has started the project off with \$100,000 for 1914.

The City of Richmond has voted \$1,170,000 in bonds for the training walls and bulkheads of the Inner Harbor, two commodious wharves with concrete buildings and the construction of the tunnel and roadway. The Government is to be asked to do the dredging of the harbor. More money from the Federal Treasury will be asked as the work proceeds and the city will vote more bonds. The total cost of the new harbor, which extends, including the main channel, from a point beyond the Santa Fe wharves, to Point Isabel, in the vicinity of Stege Station, will be something like \$4,000,000.

The depth of the main harbor will be 24 feet at the beginning with a final depth of 30 feet. The arm will have 20 feet depth. Under a \$250,000 contract, let in January, 1914, work has begun on the tunnel. This bore will be completed in August.

GENERAL SUMMARY AND COMPARATIVE TABLE OF SHIPMENTS OUT OF STATE BY RAIL, OF FRUITS, WINE, BRANDY AND VEGETABLES
FOR SIXTEEN CONSECUTIVE YEARS
Tons of 2,000 Pounds.

Kind.	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910 By Rail	1911 By Rail	1912 By Rail	1913 By Rail
Green Deciduous Fruits	69,722.2	96,943.6	91,176.5	92,672.7	100,390.9	101,198.7	78,988.6	115,083.6	113,679.0	106,066.0	161,224.0	203,275	204,876	187,884	167,603.9	156,393
Citrus Fruits	180,655.9	181,916.8	226,546.6	322,871.4	225,668.8	299,622.4	885,747.6	454,082.4	383,418.9	412,696.1	399,094.0	476,959	446,384	580,799	479,098.8	238,222
Dried Fruits	76,692.7	86,935.3	90,052.8	106,987.1	151,944.5	149,531.1	156,769.2	118,479.3	112,176.9	184,821.6	133,946.9	154,756	138,892	114,483	194,175.2	111,782
Raisins	47,796.8	36,008.7	36,047.0	48,814.0	47,575.2	39,963.4	54,184.7	32,634.7	42,457.3	.....	*29,610.0	61,534	67,278	*46,513	.....	39,279
Nuts and Olives..	5,815.2	6,408.4	6,518.4	8,462.4	10,918.9	9,377.4	9,810.5	7,610.6	5,181.5	7,198.0	10,387.5	12,438	12,308	12,751	15,399.1	11,611
Canned Fruits and Vegetables.....	52,319.7	75,240.0	75,556.9	83,222.1	80,834.8	94,204.8	86,077.9	91,877.9	77,636.5	104,624.6	185,135.0	171,223	178,746	182,258	89,946.1	106,998
Raw Vegetables ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	92,500.8	86,014	78,829	130,738	129,659.6	147,277
Wine and Brandy..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70,758.2	75,656	82,144	83,952	93,249.8	83,012

The above figures for 1912 and 1913 were reported by the Southern Pacific, Santa Fe and Western Pacific lines. Previous to 1912 the figures reported were from the Southern Pacific and Santa Fe only.

CARLOADS 10 TONS EACH

Total carloads fresh, dried and canned fruits and vegetables and wines and brandy since

1896	38,254	1902	77,538	1908	98,404
1897	48,072	1903	88,085	1909	120,690
1898	56,149	1904	92,053	1910	109,456
1899	55,483	1905	99,409	1911	116,287
1900	66,798	1906	90,587	1912	116,913
1901	82,732	1907	95,299	1913	92,487

*Lack of uniformity in classification of some kinds of products by the several roads prevents their segregation more specially in this table. For instance in some cases "dried fruits" are made to include prunes and raisins, to comply with the economics and methods of account of the freight offices.

†Previous to 1910 shipments of fruits, vegetables, etc., by rail and sea were not segregated. The pack of canned fruits and vegetables for 1911-12-13 is given on another page.

Dairy and poultry products, fresh and canned fruits and vegetables taken on at this port as supplies and not included above, reach a value of about \$1,650,000.

One road reports having brought into the State in 1913, 5,677 tons of dairy products and eggs and 1,964 tons of poultry, game and fish. A second road reports having brought in 2,421 tons of dairy and poultry products, while a third reports 40,150 cases of eggs and 3,692 tons of poultry, butter and cheese. Two of the lines report bringing into the State 640 tons of potatoes, beans and other vegetables during the year 1913.

Citrus Fruits. The citrus industry in California, according to Mr. G. Harold Powell, a prominent authority, represents \$200,000,000 capital invested, 10,000 growers and 100,000 people who depend upon it for a livelihood. There are nearly 200,000 acres planted to citrus fruits in California. The value of the citrus crop in 1910-11, the record year, was \$33,000,000.

The total shipments of citrus fruits from the State for the season 1912-13 were, according to the "California Fruit Grower," 18,085 carloads.

The following table gives the shipments of citrus fruits from the entire State for the last thirteen years, as follows:

Season	CARS.		Total
	Oranges	Lemons	
1900-01	.....	.....	24,900
1901-02	.....	.....	19,180
1902-03	.....	.....	23,871
1903-04	26,160	3,239	29,399
1904-05	26,044	5,378	31,422
1905-06	23,697	3,913	27,610
1906-07	26,313	3,507	29,820
1907-08	27,770	4,959	32,729
1908-09	34,320	6,196	40,516
1909-10	28,317	4,782	33,099
1910-11	39,630	6,764	46,394
1911-12	34,329	5,961	40,290
1912-13	15,893	2,192	18,085

Below we give extracts from the Report of the General Manager of the California Fruit Growers' Exchange (which was issued in September, 1913), as it gives an account of the shortage of the citrus crop for the season 1912-13:

At the beginning of the year ending August 31, 1913, the California Fruit Growers' Exchange shippers estimated that they would ship 34,000 carloads, or about 13,250,000 boxes of citrus fruits, comprising 27,000 carloads of oranges and grape fruit, and 7,000 carloads of lemons. This was the largest estimated shipment in the history of the Exchange. Detailed arrangements were made in the fall of 1912 to handle the increased crop.

In November and December, 1912, severe desert winds reduced the crop at least 10 per cent; in January, 1913, unprecedented cold weather destroyed the fruit in many sections, injured it severely in others, while in a few localities the crop escaped serious injury.

As a result of the reduction of the crop by these causes the Exchange shippers sold only 12,443 carloads of fruit, 5,000,000 boxes in round numbers, or 37.7 per cent of the estimated shipments for the year. This amount represents 61½ per cent of the total citrus fruit shipments from the State during this period. (The California Fruit Growers' Exchange represents about 6,500 growers of citrus fruits who have organized themselves into 115 or more local associations. Most of these are in the southern counties, but some are in Tulare and Fresno counties, and in some of the northern citrus localities.)

Because of the shortage of the crop, the fruit sold through the Exchange brought California over \$13,500,000, or an average return f. o. b. cars of \$2.75 for every box shipped. This average is 50.2 per cent higher than the average f. o. b. returns per box for the preceding eight years.

The shipments during the fiscal year 1912-13 were 53 per cent of the shipments of 1911-12. The f. o. b. returns to California, on account of the shortage created by the frost, equals 79 per cent of the returns of 1911-12. The proceeds paid by the associations to the producers after deducting all packing and selling charges, though unequally distributed in localities on account of the frost, represent approximately 85 per cent of the proceeds returned by the associations to the Exchange producers in 1911-12. The f. o. b. average price per box, as a result of crop shortage, is 47 per cent higher than the average for 1911-12, and 50.2 per cent higher than the average f. o. b. price received during the preceding eight years.

SHIPMENTS FOR STATE.

Season 1911-12.		Season 1912-13.	
Oranges from Southern California...	Cars	Oranges from Southern California...	Cars
Oranges from Central and Northern California	4,002	Oranges from Central and Northern California	2,319
Lemons from California	5,961	Lemons from California	2,192
Total ..	40,290	Total	18,085

Fresh Fruit. The fruit distributing associations and others furnish statistics of shipments of deciduous fruits to Eastern markets for the year 1913 as given in the table herewith. As the varieties are shown, they add to the value of the tables of shipments. The figures are for actual carloads without regard to tons in a car. The minimum fixed by the railway companies now is 13 tons, but a carload is often 30 tons. Other tables in the report retain the original 10-ton unit. As an illustration, the table on another page shows 16,122 carloads of fresh fruit for 1908, while the Fruit Association's table gives the number at 12,917 cars. An apparent discrepancy occurs in using actual carloads in one instance and the 10-ton unit in the other.

FRESH DECIDUOUS FRUIT SHIPMENTS FROM NORTH OF TEHACHAPI,

Varieties.	1906	1907	1908	1909	1910	1911	1912	1913
Cherries	150	98	208½	250	250	216½	244	231
Apricots	16	71	231½	210	290	214½	195	169½
Peaches	584	699	1,980½	2,599	2,518	2,027	1,621	2,395¾
Plums and prunes . .	1,220	1,039	1,763	1,526	1,552	1,391	1,775	1,668
Pears	1,513	1,039	2,701½	2,638	2,361	2,324	3,134	2,485¾
Grapes	2,052	3,460	3,816½	5,880	4,948	6,374½	6,354	6,363¾
Apples (below)	770	1,085	2,216	2,188	2,153	....	....	....
*Miscellaneous . . . . .	....	....	....	19	....	16¼	17	18½

Total carloads . . . 6,305 7,491 12,917 15,280 14,072 12,539 13,340 13,331½

* Includes quinces, persimmons and figs previous to 1909 not counted separately.

Total fresh deciduous fruit shipments from south of Tehachapi in 1913 amounted to 575 carloads.

The above table for shipments from north of Tehachapi does not include apple shipments for 1913. The Pacific Fruit Express Company report having moved 358 carloads of apples out of the State during that year. (These figures include shipments from Pajaro Valley and Sonoma apple districts.) Sonoma County shipped out 400 carloads additional.

Pajaro Valley reports 1200 carloads shipped out of the district. The shipments there were short this year owing to unfavorable climatic conditions. The usual shipments from this valley in a normal season are about 4000 cars.

The "Orange Judd Farmer" puts the apple crop of the State for 1913 at 1,200,000 barrels.

Dried Fruits. Nearly all kinds of deciduous fruits are dried for the market, but prunes, peaches and apricots are the most important. The dried output of all, except figs, varies largely according to the season, the demand of the Eastern market for fresh fruit, and the prices offered by the canners; 1913 was not a good year for some varieties of deciduous fruits.

OUTPUT OF CURED FRUITS, INCLUDING PRUNES AND RAISINS, 1906-1913.

	In Tons.							
	1906	1907	1908	1909	1910	1911	1912*	1913*
Apples	2,500	3,300	3,350	3,000	3,000	3,500	3,500	1,900
Apricots	3,000	1,100	19,000	14,000	15,250	8,800	18,500	9,700
Figs	3,000	4,500	2,900	4,000	3,775	5,250	5,000	4,500
Peaches	10,000	15,000	23,000	20,000	25,000	13,000	27,000	20,000
Prunes	92,500	53,000	28,500	75,000	40,000	88,000	97,000	45,000
Raisins	50,000	75,000	65,000	70,000	62,500	67,500	85,000	65,000
Various other, pears, plums, etc.	2,700	1,200	3,000	2,500	1,750	1,750	3,000	2,000
Total tons	163,700	153,100	144,750	188,500	151,275	187,800	239,000	148,100
*Approximate.								

* Approximate.

Prunes. Of dried fruits, prunes come next in importance to raisins. Prunes are grown in many counties throughout the State; the largest center of this industry is the Santa Clara Valley. A good many prunes are grown in the San Joaquin and Sacramento Valleys and also in Contra Costa and Sonoma Counties.

The output varies largely in different years.



This Shows the Method of Fruit Drying in California. The Sun Does the Preserving.

Courtesy "Sunset."

CALIFORNIA PRUNE OUTPUT, 1898-1913

Year	Tons	Year	Tons
1898	45,210	1906	92,500
1899	56,863	1907	53,000
1900	87,000	1908	28,500
1901	40,800	1909	77,500
1902	98,500	1910	45,000
1903	82,500	1911	88,000
1904	67,500	1912	97,000
1905	31,250	1913	45,000

FRESH FRUITS AND VEGETABLES

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

Note.—For list showing counties where each variety of fruits and vegetables are produced, refer to data on large State map appended to this report.

Fresh Vegetables

Besides supplying the home markets abundantly the shipments of fresh vegetables to the Eastern markets in 1913 amounted to 147,277 tons, and these shipments are increasing year by year.

The principal kinds and the districts from which they go are as follows:

Asparagus Delta Region, Los Angeles, Alameda.
 Cabbage Los Angeles, San Francisco, San Jose.
 Cauliflower.... Los Angeles, San Francisco and Alameda.
 Celery Los Angeles, San Francisco, Stockton.
 Melons Los Angeles, Stockton.
 Potatoes Delta Region, Los Angeles, San Francisco and Alameda.
 Tomatoes..... Los Angeles, Delta Region, Alameda.
 Onions..... San Jose, San Francisco, Delta Region and other points.
 Artichokes Los Angeles, San Jose and other points.
 Lettuce Los Angeles, San Jose and other points.
 Rhubarb Alameda, Sacramento Valley, San Joaquin Valley, Central California.

Shipments of melons, etc., from Imperial County and celery, etc., from Orange County are included in Los Angeles territory.

The "Delta Region" includes all the country of the lower Sacramento and San Joaquin rivers.

Shipments from North of Bay Counties by rail are included in those from San Francisco.

By potatoes is meant only the shipments of early potatoes.

In 1913 the total shipments out of the State of cantaloupes was 3,444 carloads from Imperial County and 262 from Turlock, Stanislaus County.

Canning Industry. The canning of fruit and vegetables is an important industry in California and the yearly output of canned goods is very large. The aggregate number of cases of all kinds of fruit and berries canned in 1912 and the vegetable output was larger than for any previous year. The demand for fresh fruit and vegetables at home and for shipping, takes a large quantity that would otherwise go to the canner.

Below we give the California canned fruit and vegetable pack for the years 1911-12-13, and of the total fruit and vegetable packs for the past thirteen years. The totals both of fruits and vegetables show a decline in 1913 from 1912 caused by short crops, scarce money, etc.

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Fruits—	1913			1912			1911		
	No. 2½, 3 (all grades) and smaller equivalent of 12-can cases	Cases	Gallons (all grades) in 12-can cases	No. 2½, 3 (all grades) and smaller equivalent of 12-can cases	Cases	Gallons (all grades) in 12-can cases	No. 2½, 3 (all grades) and smaller equivalent of 12-can cases	Cases	Gallons (all grades) in 12-can cases
Apples	2,305		29,230	9,500		70,750	8,750		56,550
Apricots	714,970		133,910	772,775		125,230	708,500		149,825
Blackberries	27,370		48,040	55,375		46,630	35,250		42,575
Cherries, Royal Ann	96,100		6,770	215,640		21,820	99,700		11,740
Cherries, black	25,450		2,290	52,670		4,050	26,860		2,005
Cherries, white	28,665		3,390	51,025		6,690	49,730		8,770
Grapes	35,215		6,450	40,960		6,225	62,115		8,800
Loganberries	12,465		3,270	16,965		4,415	12,106		7,011
Pears	488,370		41,490	832,350		41,850	579,960		38,960
Peaches, free	523,475		245,275	480,660		103,140	582,200		156,200
Peaches, cling	1,508,500		121,300	1,469,275		160,980	1,210,525		142,200
Plums	52,770		13,205	148,990		26,300	143,350		22,490
Raspberries	5,165		425	8,520		570	2,950		675
Strawberries	8,465		790	25,800		8,670	6,505		1,210
Other fruits	7,675		1,730	23,565		2,510	1,395		3,743
Total fruits	3,536,960		657,565	4,204,070		629,830	3,529,896		652,754
Grand total fruits (cases)			4,194,525			4,833,900			4,182,650
Vegetables—									
Asparagus	716,650		6,350	714,900		4,300	684,960		2,105
Beans	83,255		6,935	76,690		7,665	53,110		12,710
Peas	86,970		6,900	251,275		18,150	162,570		22,205
Tomatoes	989,550		157,010	1,396,900		224,200	1,306,190		209,260
Other vegetables	103,365		35,345	66,390		29,025	39,575		23,970
Total vegetables	1,979,790		212,540	2,506,155		283,340	2,246,405		270,250
Grand total vegetables (cases)			2,192,330			2,789,495			2,516,655
Grand total pack (cases)			6,386,855			7,623,395			6,699,305

Pineapples are packed by California enterprise but are exported from Hawaii.

CANNED FRUIT AND VEGETABLE PACKS, 1900-1913.

Year	Cases		Year	Cases	
	Fruits	Vegetables		Fruits	Vegetables
1900	2,775,896	803,617	1907	2,982,955	1,941,755
1901	2,677,072	1,076,058	1908	4,734,663	1,501,885
1902	2,252,790	1,151,268	1909	3,047,001	1,242,720
1903	2,733,504	1,343,574	1910	4,008,549	2,250,645
1904	2,839,733	961,783	1911	4,182,650	2,516,655
1905	3,283,296	1,192,455	1912	4,833,900	2,789,495
1906	3,109,225	1,747,595	1913	4,194,525	2,192,330

Canning of fresh vegetables is carried on at various points where there is an ample supply grown.

Asparagus is mainly canned in the Sacramento district, in San Jose and in Orange County.

Peas mostly in Southern California, Alameda and Santa Clara Counties.

Tomatoes in Southern California, Santa Clara Valley and Sacramento Valley.

The following is of interest as showing the period of time during which the various fruits and vegetables are canned:

CALIFORNIA CANNING SEASON.

(J. K. Armsby Co.)

Approximate Period of Packing the Different Varieties.

Fruits.

Apricots.....	Latter part of June to latter part of August.
Blackberries.....	Latter part of June to fore part of September.
Cherries.....	Latter part of May to middle of July.
Currants.....	Last three weeks of June.
Gooseberries.....	Latter part of May to latter part of June.
Grapes.....	Fore part of September to end of October.
Nectarines.....	Latter part of July to fore part of September.
Pears.....	Latter part of July to latter part of September.
Peaches, Free.....	Latter part of July to middle of October.
Peaches, L. C.....	Latter part of July to middle of October.
Peaches, W. C.....	Middle of August to middle of October.
Plums, Green Gage.....	Middle of July to middle of September.
Plums, Egg.....	Middle of July to middle of September.
Plums, Golden Drop.....	Fore part of August to fore part of September.
Plums, Damson.....	Latter part of August to latter part of October.
Quinces.....	Middle of September to middle of November.
Strawberries.....	Fore part of May to latter part of October.

Vegetables.

Asparagus.....	Latter part of March to middle of June.
String Beans.....	Middle of June to end of November.
Peas.....	Middle of May to latter part of June.
Tomatoes.....	Latter part of August to latter part of November.

The Vineyard. California is the most important factor in viticulture in the United States. It has over 90,000,000 vines, more than all the United States. It represents an investment of \$150,000,000 which returns an annual income to the grower of over \$20,000,000. Over 100,000 people are dependent upon California's viticultural industry. This includes 15,000 heads of families that own vineyards, 700 wine-makers, and the laborers who do the picking and hauling, besides those employed in the wineries and those engaged in cultivating and handling our raisin and table grapes.

According to the 1910 report of the State Board of Equalization, nearly 350,000 acres were devoted to grape growing. Of this, 275,000 acres were in full bearing; 36,000 acres were devoted to table grapes; 109,000 to raisin grapes and 130,000 to wine grapes.

The shipments of table grapes out of the State by rail for 1913 amounted to 6,363 carloads.

Raisins. The center of the raisin industry is in Fresno County, although raisins are produced in other parts of the State. The crop varies from year to year, as the appended table shows:

CALIFORNIA RAISIN CROP.

Year	Tons	Year	Tons
1897	46,852	1906	47,500
1898	40,365	1907	60,000
1899	35,784	1908	60,000
1900	47,167	1909	70,000
1901	37,125	1910	56,000
1902	54,375	1911	67,500
1903	60,000	1912	85,000
1904	37,500	1913	65,000
1905	43,750		

Of the fifty-eight counties in California, less than a dozen produce raisins in commercial quantities. At the present time the proportion of a full crop raised by each county is estimated to be approximately as follows:

COUNTIES WHERE RAISINS ARE PRODUCED.

	Pounds		Pounds
Fresno	94,000,000	San Diego	3,200,000
Tulare	25,000,000	Madera	2,400,000
Kings	20,000,000	Yolo	2,000,000
Sutter	4,000,000	Kern	1,100,000
San Bernardino	3,600,000		

The above figures show that Fresno County produces about 60 per cent of the California raisin crop, and nearly twice the quantity produced by Spain, which produces from 15,000 to 30,000 tons and has held the lead for centuries. It was in 1892 that the California raisin crop first equaled that of Spain, and it has been increasing the difference ever since.

Seeded Raisins. Fresno County is the center of the seeded raisin industry, where it originated. The following figures show the wonderful increase in this popular form of raisins in California during the past eighteen years:

Year	Tons	Year	Tons
1896	700	1905	21,000
1897	3,500	1906	24,000
1898	7,000	1907	26,000
1899	12,000	1908	24,000
1900	14,000	1909	28,000
1901	14,000	1910	31,500
1902	16,000	1911	33,000
1903	18,000	1912	35,500
1904	18,000	1913	49,000

(The above are only approximate figures.)

WINE AND BRANDY

Wine and Brandy. During the past ten years the manufacture of California wines has steadily increased, as shown by the following table. The yield for 1911 was about 49,280,000 gallons. The production of sweet wines that year was the greatest in the history of the industry, viz.: 23,280,044.48 gallons, while the dry wine output totaled 26,000,000 gallons. The production in 1913 was less, but some 4,702,219 gallons more than in 1912.

WINE AND BRANDY PRODUCTION, 1897-1913.

Year	Dry Wines Gals.	Sweet Wines Gals.	Brandy Gals.
1897	28,736,400	5,197,500	1,442,468
1898	10,750,000	7,779,000	1,250,000
1899	15,103,000	8,330,000	1,699,035
1900	16,737,260	6,940,300	3,256,513
1901	16,473,731	6,270,300	1,688,482
1902	28,224,146	14,835,146	4,564,173
1903	21,900,500	12,670,356	1,972,000
1904	15,589,342	13,571,856	4,420,839
1905	20,000,000	10,700,000	1,750,000
1906	26,000,000	15,000,000	1,250,000
1907	27,500,500	15,500,000	1,345,000
1908	22,500,000	14,750,000	1,500,000
1909	27,000,000	18,000,000	2,000,000
1910	27,500,000	18,000,000	2,500,000
1911	26,000,000	23,280,044	2,000,000
1912	22,500,000	17,797,781	1,799,539
1913	25,000,000	17,307,600	1,695,406

California wines have a wide and growing market at home and abroad. The railroad shipments, given on another page, go mainly to Eastern points, while those by sea go to the four quarters of the world.

In this connection the following is of interest:

EXPORT OF WINE BY SEA.

Year	Cases	Gallons	Value	Number of Countries Receiving
1908	....	4,250,799	\$1,657,089	12
1909	....	7,440,294	2,386,111	23
1910	....	9,866,539	3,162,600	26
1911	11,535	15,125,375	4,910,138	32
1912	11,388	13,238,223	4,537,753	33
1913	6,933	12,935,239	4,605,724	24

The commercial brandy production of California during 1913 was 1,695,406 gallons, while the brandy manufactured for the fortification of sweet wines was 4,674,350.

The shipments of wine out of California by rail during 1913 were about 52,000 cases and 11,154,400 gallons, while the exports by sea amounted to 6,933 cases and 12,935,239 gallons, valued at \$4,605,724.

To this must be added the brandy exported, which was 965 cases and 38,047 gallons, valued at \$66,473. Twenty-four countries, besides the United States, received this wine.

The output of champagne naturally fermented in bottles for 1913 was about 950,000 bottles, or near 52,000 cases. This new industry will be greatly extended the coming season. Three manufactories are at present engaged in making this champagne.

Olives, Olive Oil, Etc. Olive culture is one of the oldest fruit industries in the State. The first orchard was planted in San Diego in 1769, and that county is a large producer of olives and olive oil. There are large orchards in other counties, and every year adds to the number of trees. There are thirty-three counties reporting over 1,000 trees each, ranging from Shasta on the north to San Diego on the south. The number of trees in 1910, as reported by the State Board of Equalization, was about 1,002,000 in bearing, and is constantly being increased. Los Angeles leads with 320,800 bearing trees.



Thompson Seedless Grapes.
Courtesy "Sunset."

Statistics of this industry are difficult to obtain. This industry is becoming more attractive from a remunerative point of view, and the removal of competition with adulterated oil by the Pure Food regulations has given quite an impetus to planting new trees. Estimate of the production for 1913 is given by the American Olive Oil Company at 1,500,000 gallons of olive oil, and 250,000 cases of pickled olives, six gallons to the case.

Imports, 1912-13, were 5,221,000 gallons of oil over 2,946,076 gallons of pickled olives.

Recently new plantings have been large in many districts favorable for the industry.

Honey. While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the San Joaquin Valley and the counties south. The crop for 1909 was the record crop and many thousands of stands of bees are sent from other States to winter in California.

According to figures furnished by the State Bee-Keepers Association there are about 588,000 colonies of bees in the State with an average of 70 pounds of honey a year, valued at 6 cents a pound.

The estimates of the honey product for several years are:

Year	Pounds	Year	Pounds
1899	2,822,000	1907	8,700,000
1900	2,208,000	1908	5,250,000
1901	8,112,000	1909	11,532,000
1902	5,125,000	1910	5,500,000
1903	8,400,000	1911	9,500,000
1904	7,000,000	1912	4,710,000
1905	9,500,000	1913	3,720,000
1906	5,250,000		

Silk. The raising of silk worms, which attracts some attention, is increasing slowly in California, and though not yet on a commercial basis, it is likely to become a good industry. The climate of California is admitted to be adapted to the raising of silk. The season for production extends over a period of six to eight months, while in Europe it lasts only as many weeks.

The matter of labor is all that prevents this from being a great industry.

Nuts. The production of almonds fluctuates greatly and the crop of 1913 was only half that of 1908 and 1912, which were the record crops.

The production of walnuts is more regular, and the crop for 1913 equaled that of 1911, which was above the average and gave good returns.

ALMOND AND WALNUT PRODUCTION, 1895-1913

Year	Almonds Tons (2,000 lbs.)	Walnuts	Year	Almonds Tons (2,000 lbs.)	Walnuts
1895	825	2,310	1905	2,125	5,750
1896	1,605	4,115	1906	900	6,125
1897	2,375	3,985	1907	750	8,250
1898	450	5,650	1908	3,000	8,000
1899	2,320	5,530	1909	1,650	7,500
1900	2,740	5,430	1910	2,750	8,500
1901	1,560	6,910	1911	1,700	12,000
1902	3,270	8,520	1912	3,000	11,500
1903	3,200	5,500	1913	1,750	12,000
1904	800	7,590			

Leading authorities place the aggregate value of these crops at \$3,825,000.

The average production of walnuts in California for the past sixteen years was about 8,064 tons. The average importations for last nine years was about 13,471 tons.

The average production of almonds for sixteen years in California was 1,968 tons. The quantity of almonds grown in California is so small, compared with the importations, that prices vary according as the latter are light or heavy.

CALIFORNIA DEVELOPMENT BOARD

DAIRY INDUSTRY

The dairy industry is year by year more extended and important. Comparative statistics of butter production of the State for a series of years beginning with 1896 show the growth of the industry, and yet the supply falls so far short of the demand as to necessitate the bringing in of large quantities of butter from other States. At the same time large quantities of butter go East on special order from those who have tasted California creamery butter.

The season, as covered by the report of the State Dairy Bureau, ends September 30th of each year.

Despite the persistent efforts of that Bureau, some creameries and large producers in a number of counties fail to make report of their production.

Scientific Dairying. Scientific dairying has almost wholly superseded the old methods in California, as the following table, showing the number of pounds of butter produced in the State by the creamery method and the old method for seven years ending October 1, 1902, demonstrates:

PRODUCTION OF BUTTER (POUNDS)

Year	Creamery Method	Totals	Old method
1896	10,097,323	31,605,440	21,508,117
1897	10,866,646	28,678,439	17,811,793
1898	10,410,479	23,691,028	13,280,549
1899	12,725,814	24,869,084	12,143,270
1900	16,486,695	28,782,859	12,296,164
1901	19,017,512	29,730,882	10,713,370
1902	21,593,021	31,528,763	9,935,741

Since 1902 the growth is indicated in the following exhibit:

Year	Pounds	Year	Pounds
1903	34,676,311	1909	49,595,869
1904	35,636,909	1910	45,819,741
1905	41,961,047	*1911	50,380,736
1906	44,044,578	*1912	54,940,886
1907	44,599,211	*1913	55,542,709
1908	48,469,585		

*Reported by State Dairy Bureau.

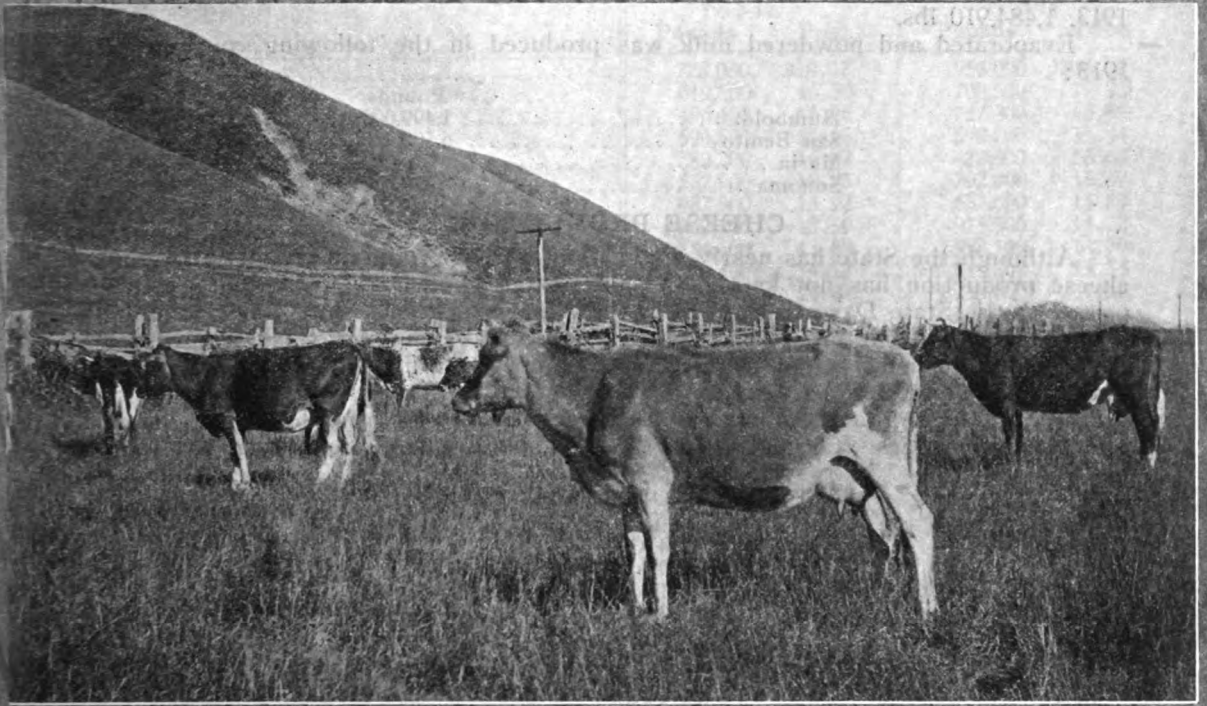
California is now well to the front as a dairy State. The production of butter for 1913 is the largest in the history of the industry. The increase is mostly in counties where irrigation is practiced.

IRRIGATION AND DAIRYING

As showing the effect of irrigation on the dairy interests the following exhibit from the reports of the State Dairy Bureau, giving the product of butter in pounds by principal counties in which irrigation is practiced, is instructive:

Counties	1908	1909	1910	1911	1912	1913
Fresno	3,315,926	3,721,262	3,290,825	3,803,644	4,144,404	3,878,289
Kern	521,495	545,900	565,900	693,413	732,059	566,965
Kings	2,419,651	3,432,879	3,218,036	3,552,542	3,069,881	2,313,963
Merced	2,831,846	1,396,865	2,510,269	3,102,222	1,351,049	3,910,815
Sacramento	1,277,771	1,592,138	1,102,012	1,405,054	1,900,417	1,936,560
San Joaquin	1,605,152	2,350,000	1,425,543	941,430	1,336,344	1,215,644
Stanislaus	4,113,866	4,155,701	4,363,296	5,166,515	6,894,225	7,541,900
Tulare	2,729,377	2,307,238	3,072,198	3,955,583	3,947,284	3,971,217
Yolo	944,268	807,787	1,103,114	1,096,718	1,104,509	1,034,902
Imperial	1,165,763	1,677,640	1,948,941	2,885,941	4,110,736	5,398,228
Humboldt (non-irrig.)	4,495,041	4,715,998	4,790,280	5,238,382	5,095,014	5,168,990

Imperial is entirely dependent on irrigation, and its butter production, since its formation in 1908, has grown nearly four-fold, as the above shows.



Dairying is Becoming a Leading Industry in California.
Courtesy "Sunset"

While irrigation has been a most important factor in the increase of butter production, as shown above, Humboldt County, with its abundant rainfall rendering irrigation unnecessary, claims the position of the second county of the State in dairy products, as shown by the tables, and third in butter production.

Until recently, Humboldt, with its fine natural pastures, led the butter producing counties of the State, but irrigation practiced in other counties, took away the lead.

SHIPMENTS OF DAIRY PRODUCTS FROM HUMBOLDT COUNTY, 1913
(From records of the Humboldt Chamber of Commerce)

Article	Weight pounds	Value
Butter	5,793,620	\$1,796,190
Cheese	304,570	54,820
Condensed milk	1,302,560	112,720
Dry milk	1,692,100	157,430
Fresh cream and buttermilk	277,800	6,920
Casein	1,484,910	89,100
Total	10,855,560	\$2,217,180

There is annually consumed within Humboldt County, of home produced butter, some 1,500,000 lbs. and a small percentage of cheese, condensed milk and dry milk.

A comparatively new branch of the dairy industry is the production of commercial casein. It is now produced extensively in the northern counties of the State. It is used as a sizing in making high grades of paper, also for piano keys, billiard balls, and everywhere that ivory can be used.

Humboldt County in 1911 produced 1,953,500 lbs. of casein and Del Norte County produced 120,000 lbs. In 1912 Humboldt produced 1,497,870 lbs., and in 1913, 1,484,910 lbs.

Evaporated and powdered milk was produced in the following counties in 1913:

	Pounds
Humboldt	1,499,000
San Benito	6,597,928
Marin	270,000
Sonoma	270,000

CHEESE PRODUCTION

Although the State has nearly doubled in butter production, since 1900 the cheese production has not kept pace therewith. The cheese produced and reported to the State Dairy Bureau is, with a few exceptions, only that made by the ordinary Cheddar process. There is a considerable amount of fancy and hand made cheese, which has not been reported. Out of the fifty-eight counties in the State, twenty-nine produced cheese during the year 1913. Monterey, Sacramento, Marin, San Benito, Santa Clara, Humboldt and Sutter, in the order named, were the leading counties. Comparing the totals for the past fifteen years, we have the following:

CHEESE PRODUCTION, 1899-1913

Year	Pounds	Year	Pounds
1899	5,294,938	1907	5,928,942
1900	4,989,960	1908	6,162,514
1901	5,681,366	1909	5,931,194
1902	6,503,441	1910	4,648,348
1903	7,218,639	1911	4,580,495
1904	6,133,898	1912	4,785,617
1905	6,020,672	1913	5,600,972
1906	6,418,480		

We give herewith a list of the ten counties which produced the largest amount of cheese in 1913, together with the production of each:

County	Pounds	County	Pounds
Monterey	886,183	Humboldt	372,000
Sacramento	656,260	Sutter	339,563
Marin	554,180	Lassen	232,808
San Benito	382,322	Merced	227,760
Santa Clara	379,709	Santa Cruz	187,150

Large quantities of butter and cheese continue to come from the East, notwithstanding the superior advantages presented in this State for enlarging this branch of farming and for creamery development. It is interesting to note that in 1912, 11,758,680 pounds of cheese (more than double the amount manufactured in this State), was received in the San Francisco market alone. In 1913, 9,523,200 lbs. were received.

The following are the monthly receipts of butter and of cheese, and prices therefor, in San Francisco for the two years ending September 30, 1913:

BUTTER

	1911-12		1912-13	
	Pounds	Price	Pounds	Price
October	1,946,800	\$30.68	2,035,900	\$34.00
November	1,300,350	31.39	1,819,900	33.04
December	1,114,900	33.03	1,696,500	33.66
January	1,236,400	35.38	1,767,500	34.28
February	1,723,400	34.60	1,378,100	35.10
March	1,645,900	31.42	2,008,100	35.43
April	2,183,600	27.71	2,694,700	29.10
May	2,883,600	25.29	2,614,000	26.98
June	2,309,400	27.60	2,106,200	27.72
July	2,620,400	27.82	1,711,100	28.95
August	2,626,400	31.31	2,593,600	32.43
September	1,957,700	33.08	1,479,500	34.78
Total	23,548,850	30.77	23,905,100	32.12

POULTRY INDUSTRY

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CHEESE

	1911-12		1912-13	
	Pounds	Price	Pounds	Price
October	728,080	\$14.57	956,000	\$16.92
November	619,500	16.50	700,500	17.93
December	496,400	15.96	757,800	15.89
January	594,500	16.15	599,700	15.44
February	780,200	16.42	482,800	16.63
March	552,900	18.85	792,000	15.47
April	987,800	16.92	657,600	15.88
May	1,762,200	13.59	915,500	14.22
June	1,584,600	13.69	958,100	14.79
July	1,391,400	14.12	919,300	15.54
August	1,504,200	14.04	1,214,000	17.16
September	756,900	14.65	570,400	16.82
Total	11,758,680	15.46	9,523,700	16.06

ANNUAL VALUE OF DAIRY PRODUCTS OF STATE

1911

Butter, 50,380,736 pounds	\$14,106,606
Cheese, 4,640,495 pounds	672,872
Evaporated and powdered milk, 8,820,310 pounds	793,828
Market milk, table cream and ice cream	10,000,000
Calves produced	2,000,000
Skim milk and buttermilk	1,500,000
Casein	125,478
Total	\$29,198,784

1912

Butter, 54,940,886 pounds	\$16,905,310
Cheese, 4,785,617 pounds	739,856
Condensed, evaporated and powdered milk, 9,770,784 pounds	961,662
Casein, 1,065,000 pounds	53,250
Market milk and cream	10,000,000
Calves produced on dairies	2,000,000
Skim milk and buttermilk	1,500,000
Total	\$32,160,078

1913

Butter, 55,542,709 pounds	\$17,840,318
Cheese, 5,600,972 pounds	899,516
Condensed, evaporated and powdered milk, 8,637,928 pounds	777,468
Casein, 665,000 pounds	33,250
Market milk, cream and ice cream	11,000,000
Calves produced on dairies	2,000,000
Skim milk and buttermilk	1,500,000
Total	\$34,050,552

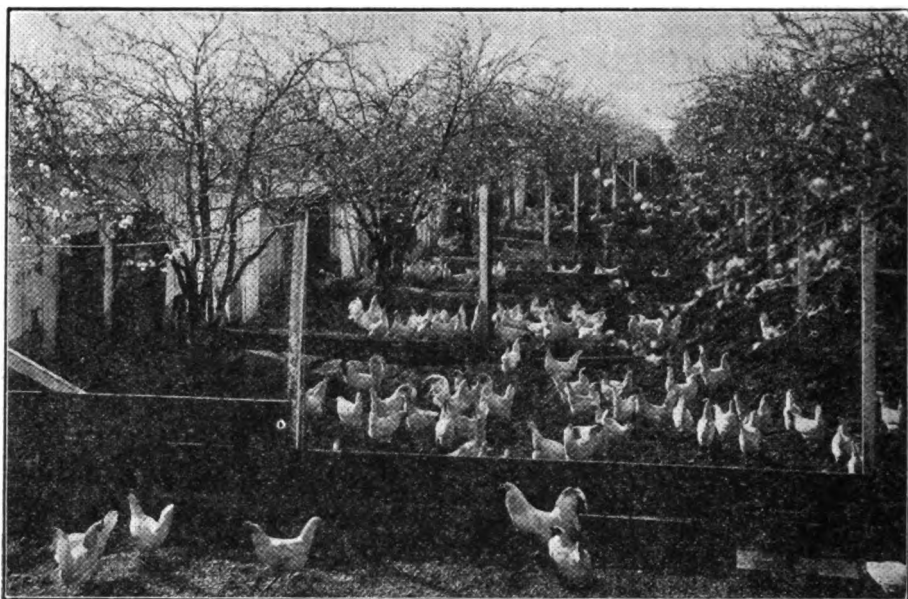
POULTRY INDUSTRY

In a more or less practical way the poultry industry has been carried on in all parts of the State, but in Sonoma, Los Angeles, Orange, Santa Clara, Merced, Sacramento, Colusa, Humboldt, San Benito and Inyo Counties, and to a less extent in some others, the latest scientific methods are generally practiced with gratifying results. The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally. The largest incubator factory in the world is in Petaluma and turns out about 100,000 chicks per month, and runs to full capacity most of the year.

A ranch which has recently been started in Inyo County with 400 acres and 12,000 laying hens selected from Petaluma and from Monroe, N. Y., is an enter-

prise that is bidding for patronage, and with its 200,000 incubator capacity and favorable climatic conditions, will do a large part in supplying the demand, especially for eggs and baby chicks. There are many places throughout California where like enterprises could be undertaken with a fair promise of success and a good market near at hand.

The average chicken ranch near Petaluma consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, quite a number larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1.00 per year.



A Profitable Industry.
Courtesy "San Jose Chamber of Commerce."

Notwithstanding the remarkable development of the poultry business at Petaluma and other places, the increase is not sufficient to meet the demands of the immediate market. The rapidly expanding population of the State requires the importation in season of some 425 carloads of live and 75 carloads of dressed poultry to San Francisco and Los Angeles, besides several million dozen eggs each year from Eastern points, and there is no immediate prospect of the home supply overtaking the market. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County and enjoys a freight rate by boat to San Francisco of ten cents per case of 36 dozen eggs. The market business done from that point, and its growth, is reflected in the following tables:

SHIPMENTS OF EGGS AND POULTRY FROM PETALUMA

Year	Eggs Dozen	Poultry Dozen	Year	Eggs Dozen	Poultry Dozen
1903	3,407,333	32,535	1909	7,159,481	120,018
1904	3,493,321	33,286	1910	7,288,215	76,278
1905	3,837,061	39,392	1911	8,134,129	80,553
1906	4,334,321	39,938	1912	10,232,121	84,425
1907	4,422,968	59,198	1913	10,464,744	88,824
1908	5,312,804	83,136			

The above figures represent actual shipments of eggs to market. It is but fair to say that over 1,681,166 dozen eggs are produced which are used for hatching and for home consumption. These added to the above, bring the total production of the Petaluma district up to 12,145,910 dozen, or about 145,750,920 eggs. Three million baby chicks are estimated to have been shipped away.

The daily food requirements for poultry in the Petaluma district for the year aggregate over 600 tons, or 1,200,000 pounds, of which wheat, corn, barley, bran and middlings form the largest part, viz: about 490 tons.

POULTRY PRODUCTION IN CALIFORNIA, 1913

	Eggs Dozen	Poultry Dozen
Petaluma	10,464,744	88,824
Other points in Sonoma County	5,232,372	44,412
Total, other counties	27,500,000	168,000
Total for the State	43,197,116	301,236

FISHING INDUSTRY

Both the interior and the coastal waters of California abound in food and game fish, offering inducements both to the pleasure-seeker and the profit-earner.

There are about 165 species of cold-water fauna whose proper home is north of Point Concepcion, and 117 species of semi-tropical fauna found south of Point Concepcion, beyond the reach of the cold currents of the north.

Of these, one hundred and thirty-three varieties of food fish are found in the San Francisco markets, including oysters and shell fish.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento basin. Through the work of the Federal and State Commissioners, however, the rivers have been re-stocked and now there are more salmon in the Sacramento River than ever before, but they are mostly marketed as fish.

The State maintains seven hatcheries, at one of which, the Sisson hatchery, more salmon fry are hatched than at any other hatchery in the world. There is also one hatchery and two egg-collecting stations under Federal supervision. Some 30,762,000 fry of various kinds of food and game fishes were deposited in the streams in 1910. Over 30,000,000 pounds of the fish taken for the market are caught in the waters of the bay counties and the Sacramento River.

The Alaska Packers' Association maintains two large hatcheries in Alaska, and in 1913 nearly 62,603,000 salmon fry were liberated in the rivers.

Besides her home fisheries, there is employed in packing salmon in Alaska waters and Puget Sound, over fifty San Francisco vessels, many men and a large amount of California capital. The following table shows California's share of the industry, which is very large:

PACIFIC COAST FISHING INDUSTRY.

Extent of industry	California
Capital employed	\$10,000,000
Number of persons employed	9,000
Earnings of labor employed	2,500,000
Value of output	7,000,000

The California pack of mild cured salmon for 1913 was 5,339 tierces, 800 lbs. each.

Canned salmon and other fisheries products are sent by sea from San Francisco to nearly every country in the world. Shipments during 1913 were as follows:

	Cases	Pounds	Value
Canned salmon	908,159	43,591,632	.....

The Alaska Packers' Association report their pack for 1913 as 1,504,415 cases.

The California Salmon Packing Companies report their pack for 1913 as 1,968,418 cases.

The U. S. Whaling Company was the only one operating a shore whaling station in 1913. This was at Port Armstrong, Baranof Island. The catch was 186 whales.

Product	Value
466,500 gallons oil	\$139,950
665 tons fertilizer	17,600

Total \$157,550

The S. S. Gayhead was the only vessel of the Pacific fleet sperm whaling. She left San Francisco on December 27, 1912, and returned August 30, 1913, with 992 bbls., (32430 gals.) of sperm oil, valued at \$12,072. She left again October 3rd and will probably not return until the spring of 1914.

Products of Alaska cod fisheries in 1913, were as follows:

Products	Prepared weight, pounds	Value
Salted	11,885,500	\$355,912
Pickled	15,700	624
Tongues, pickled	8,000	720
Stock fish	7,700	375
	11,916,900	\$357,711

San Francisco codfish fleet in 1913 caught 1,614,847 fish.

The California sardine pack amounted to 73,686 cases in 1913, nearly the entire pack coming from Monterey Bay.

The California tuna pack in 1913 amounted to 115,000 cases. The tuna is found off the coast of Southern California.

In the propagation of trout and salmon, California leads the world. In 1913, 8,441,737 trout and 16,302,227 salmon were propagated at hatcheries and liberated in streams.

FARM ANIMALS

The following figures from the U. S. Farmers' Bulletin show a decrease in the total number of animals for the year 1913, but an increase in the value of same amounting to \$3,834,300 over 1912.

Kinds	1911			1912			1913		
	Number	Average Price	Value	Number	Average Price	Value	Number	Average Price	Value
Horses.....	493,000	\$117.00	\$ 57,681,000	503,000	\$109.00	\$ 54,822,700	498,000	\$100.00	\$ 49,800,000
Mules.....	72,000	136.00	9,792,000	73,000	130.00	9,490,000	73,000	120.00	8,760,000
Milch cows....	505,000	53.00	26,765,000	510,000	53.50	27,285,000	515,000	62.00	31,930,000
Other cattle...	1,515,000	26.70	40,450,000	1,454,000	29.20	42,457,000	1,410,000	33.00	46,530,000
Sheep.....	2,556,000	3.00	9,562,000	2,603,000	3.70	9,631,000	2,551,000	3.80	9,694,000
Swine.....	830,000	8.30	6,889,000	822,000	9.20	7,562,000	797,000	10.50	8,368,000
Total.....	5,331,000		\$151,139,000	5,965,000		\$151,247,700	5,844,000		\$155,082,000

The number of sheep is less than the average of previous years, but improving in quality. This is partly ascribed to the extension of the forest reserve and restriction of grazing areas. It is estimated that about 55,000 head of cattle, 160,000 sheep and 65,000 hogs are slaughtered for market in the State each month, a part of which comes from adjoining States. Enlarged outside markets and increasing home demand auger well for the future of the stock-growing industry, especially of hogs. The Government gives the average age at which hogs are marketed in the Pacific States at twelve months.

The census report gives as of April 15, 1910, the following from 80,304 farms reporting:

Kind	Farms reporting	Number	Value
Cattle	63,053	2,077,025	\$52,785,068
Horses and colts	76,119	468,886	47,099,196
Mules and mule colts	11,015	69,761	9,016,444
Asses and burros	1,099	2,592	347,315
Swine	31,609	766,551	5,106,803
Sheep and lambs	3,857	2,417,477	8,348,997
Goats and kids	1,714	138,413	320,829

Dairy cows are included in cattle. 61,101 farms reported 467,332 cows and heifers, valued at \$18,597,328. The number and price is increasing.

Wool. The wool clip for 1913, as estimated by Mr. E. H. Tryon of San Francisco, shows a decline compared with that of 1912. The table shows that it is the smallest since 1873 and less than one-fourth of that of 1876, the record year. The vast ranges that prevailed in the valleys of California are now covered by small farms and orchards, which accounts for the decline in this industry.

WOOL PRODUCTION OF CALIFORNIA, 1873-1913.

Year	Pounds	Year	Pounds
1873	32,155,169	1894	36,968,400
1874	39,356,781	1895	35,856,690
1875	43,532,223	1896	27,195,550
1876	56,550,973	1897	34,882,325
1877	53,110,742	1898	28,063,240
1878	40,862,091	1899	28,332,090
1879	46,903,360	1900	27,750,000
1880	46,074,154	1901	26,900,000
1881	45,076,639	1902	21,000,000
1882	40,529,119	1903	22,000,000
1883	40,848,690	1904	22,000,000
1884	37,415,330	1905	22,000,000
1885	36,561,390	1906	24,000,000
1886	38,509,160	1907	15,000,000
1887	31,564,231	1908	15,000,000
1888	32,569,972	1909	16,000,000
1889	34,008,370	1910	15,500,000
1890	34,854,640	1911	14,000,000
1891	33,183,475	1912	13,500,000
1892	35,802,930	1913	12,000,000
1893	33,169,375		

Note.—"Pulled" Wool not included in table.

FIELD CROPS

Grain. The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1898 and of rye since 1907:

Year	Wheat Bushels 60 lbs.	Barley Bushels 48 lbs.	Corn Bushels 56 lbs.	Oats Bushels 32 lbs.	Rye Bushels 60 lbs.
1898	12,403,700	12,263,461	1,184,040	1,943,304	.....
1899	29,666,666	14,046,087	1,536,975	1,845,787	.....
1900	20,933,333	19,769,760	1,351,975	1,477,771	.....
1901	28,751,500	26,162,780	1,850,793	4,887,374	.....
1902	18,759,490	23,489,065	1,839,150	5,148,583	.....
1903	14,880,990	21,075,000	1,777,162	5,756,964	.....
1904	10,895,216	24,418,604	1,350,000	5,250,000	.....
1905	5,660,360	22,094,186	1,204,000	4,735,000	.....
1906	8,333,330	26,162,790	1,100,000	4,300,000	.....
1907	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908	11,680,000	25,427,000	1,600,000	6,700,000	792,000
1909	11,550,000	31,270,000	1,740,000	6,280,000	842,000
1910	17,100,000	43,400,000	1,838,000	8,325,000	986,000
1911	8,640,000	40,600,000	1,836,000	7,140,000	136,000
1912	6,270,000	41,760,000	1,924,000	7,800,000	141,000
1913	4,200,000	33,150,000	1,815,000	6,636,000	120,000

In the Crop Reporter Supplement for December, 1911, the figures for the production of these grains for 1910 and 1911 revised by the light of the census showed a material decrease in production of all except barley, from figures previously published. 1913 shows a decrease in all grain crops.

The acreage devoted to wheat is falling off year by year. Competition with cheap land in other countries and other more profitable crops have caused the vast wheat ranches of a few decades ago to be cut up into small farms to meet the demand from the many homeseekers, who are pouring into California.

The yield and values of the cereal crops, sown for the harvest of 1913, as given by the U. S. Farmers' Bulletin, were as follows:

REPORT OF CROPS FOR 1913.

	Acres	Bushels	Value
Wheat	300,000	4,200,000	\$ 3,990,000
Barley	1,275,000	33,150,000	22,542,000
Corn	55,000	1,815,000	1,597,000
Oats	210,000	6,636,000	3,982,000
Rye	8,000	120,000	90,000
Total value			\$32,201,000

It appears from Department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley, which now equals in acreage and exceeds in yield and value all other grain crops combined.

In the seven years ended in 1906, according to the Year Book of the Department of Agriculture, the acreage in barley increased 60 per cent, the yield 160 per cent, and the value 230 per cent. The malting qualities of California barley give it a ready market abroad. In 1913 California ranked second among the States in the production of barley, Minnesota ranking first.

Oats are raised, in some parts of the State, more for hay than for threshing, while corn is but little used as food for work animals. Barley has long been the main grain food in California, but of late years oats have come into use to quite an extent.

HAY AND FORAGE CROP

The hay crop of California is one of her most valuable agricultural products. The census returns for the crop of 1909, a fair year, gave the yield at 4,327,130 tons valued at \$42,187,215. These returns were as follows:

Crop	Farms reporting	Acres harvested	Quantity		Value
			Amount	Unit	
Timothy alone	370	13,725	20,001	Tons	\$ 185,579
Timothy and clover mixed	958	46,661	73,183	"	629,575
Clover alone	703	8,519	20,380	"	213,289
Alfalfa	19,904	484,134	1,639,707	"	13,088,530
Millet or Hungarian grass	101	2,142	2,688	"	27,483
Other tame or cultivated grasses	2,274	90,414	119,415	"	1,253,428
Wild, salt or prairie grasses	3,679	253,127	281,033	"	2,028,494
Grains cut green	39,397	1,604,745	2,019,526	"	24,056,727
Coarse forage	2,175	25,868	60,611	"	438,095
Root forage	1,021	4,012	90,586	"	266,015
Total hay and forage, 1909	53,760	2,533,347	4,327,130	Tons	\$42,187,215
Hay (Crop Reporter), 1912 . . . . .	.....	2,500,000	3,825,000	"	52,402,000
Hay (U. S. Farmers' Bulletin), 1913. . . . .	.....	2,400,000	3,600,000	"	48,600,000

California grain cut in the milk is highly prized for hay and is sent East by the trainload for feeding race horses.

Dairying and hog raising in connection with alfalfa growing is becoming one of the leading industries of the State, being one that is within reach of the man with comparatively small capital.

The acreage of standing alfalfa has probably increased 10 per cent since 1909, making it 580,910 acres. From these, five cuttings may be made yearly on irrigated ground with an average aggregate yield of six tons per acre. The yield and value of the crop for 1913 is probably considerably over that of 1909, and nearly up to that of 1912.



Good Roads Mean Much to the Farmer in Marketing His Crops.

Courtesy "Sunset."

Beans and Other Field Crops. California is famous for the production of dried beans, onions, potatoes, etc., and they add much to the resources of the State.

From the "Farmers' Bulletin" and leading authorities in the State in handling these products, the following figures are obtained of product and value for 1913:

Product, 1913	Quantity	Farm value at harvest time
Lima beans	1,100,000 sacks	\$4,175,000
Pink beans	350,000 "	950,000
White beans	120,000 "	575,000
Other varieties	445,000 "	1,275,000
Total beans	2,015,000 sacks	\$6,975,000
Sugar beets (paid growers)	1,094,000 tons	4,923,000
Onions	1,834,000 sacks	2,750,000
Potatoes, Irish	8,746,000 "	9,720,600
Potatoes, sweet	1,000,000 "	1,200,000
Seeds, field and garden (estimated) .....	.....	2,500,000
Grand total .....	.....	\$28,068,600

Hop Crop. The hop crop in California, as elsewhere, varies greatly from year to year, influenced largely by market prospects. The crop of 1911 was very remunerative to those growers who had not contracted early in the season at prevailing prices. Short crops elsewhere sent prices to a very high figure.

The acreage and production by counties for 1912 was as follows:

Production			Production		
County	Acreage	in bales	County	Acreage	in bales
Sacramento	3,485	35,921	Sonoma	4,700	35,713
Yuba	1,328	12,321	Mendocino and Lake ...	1,450	15,115
Yolo	1,274	11,707	Alameda	160	896
Butte	785	2,584	Santa Cruz	50	400
Tehama	214	1,862	Total Coast counties..	6,360	52,124
Sutter	175	1,101			
Shasta	42	150			
Total Sacramento Valley	7,303	65,646			

CALIFORNIA DEVELOPMENT BOARD

Total acreage grown in California,		Crop in 1912, bales	117,770
1912 crop	13,667	Crop in 1911, bales	93,981
Total number of bales grown in California ..	117,770	Increase over 1911 crop, bales...	23,789

The following table gives California's crop for a series of years:

HOP PRODUCTION IN CALIFORNIA

1900-1913					
Year	Bales	Pounds	Year	Bales	Pounds
1900 ..	38,000	7,220,000	1907 ..	90,000	16,650,000
1901 ..	48,000	9,120,000	1908 ..	63,200	11,692,000
1902 ..	53,500	10,165,000	1909 ..	69,688	12,892,280
1903 ..	57,000	10,545,000	1910 ..	71,511	13,229,535
1904 ..	63,000	11,655,000	1911 ..	93,981	17,367,985
1905 ..	.....	13,135,000	1912 ..	117,770	21,198,600
1906 ..	108,000	20,000,000	1913 ..	115,000	21,275,000

Note: Acreage and production by counties for year 1913 not available at this time.

Beer. Closely connected with the hop industry is the brewing of beer. This is a great California industry, which supports 20,000 people, and the investments aggregate \$50,000,000.

Tobacco Growing. The adaptability of the soil in certain sections and of the climate to the growing of tobacco has been successfully demonstrated in some sections of the State, though it is not yet grown to a sufficient extent to be rated by the Department of Agriculture among the commercial crops of the State.

The most notable and successful effort in this line is with Turkish tobacco, and has been made in Tulare County and adjacent thereto, under the backing of the John Bollman Company of San Francisco. The production has been:

1909 ..	7,000 lbs.	1912 ..	150,000 lbs.
1910 ..	15,000 lbs.	1913 ..	600,000 lbs.
1911 ..	45,000 lbs.		

From the prospective acreage and better experience in handling, tobacco is without doubt destined to be one of the remunerative industries of the State when the culture and curing is more fully understood by the farmers in the sections where its success has been demonstrated. With imported free seed and the encouragement given by consumers the acreage for 1914 will be largely increased. This tobacco commands a large price and a crop can be handled successfully as a side issue by any farmer who will take the pains and advice and use his intelligence.

RICE, COTTON, FLAX AND HEMP

Rice. From experiments made in the Sacramento Valley during recent years by rice experts of the Department of Agriculture, the adaptability of soil and climate to the successful culture of rice has been demonstrated, in the vicinity of Biggs especially. From one planting a yield of 3,000 pounds per acre was harvested. This rice was awarded the gold medal at the Seattle Exposition in 1909. Plantings made in 1910 justified the expectations of those interested, both as to yield and quality.

The planting of 1911 was given in the "Crop Reporter" as 150 acres, yielding an average of 40 bushels per acre, 6,000 bushels in all, farm value of \$4,000. The principal planting is given by the owner of 60 acres, yielding 2,750 pounds per acre, or 16,500 pounds in all. Three varieties, Wateribune, Shinriki and Patna, chosen from a number previously tried, were used for this planting.

As given by the "Crop Reporter" for 1912, the acreage planted was 1,400; yield per acre, 50 bushels; total production, 70,000 pounds; value on basis of price paid farmers, \$64,000.

From a local authority, the acreage planted in 1913 was about 6,000 acres; yield per acre, 4,000 lbs.; total production, 12,000 tons; value to farmers, \$480,000. The Waterbure variety predominated.

Rice bids fair to become one of the commercial crops of the State.

Cotton. The adaptability of soil and climate of California to the growing of cotton has been known for some years. Of late, planting has been begun on a large scale and the acreage is increasing year by year.

In 1909 over 500 acres were planted in the Imperial Valley, Imperial County, with seeds from Georgia and Texas. The result was most gratifying, an average of over one bale, 500 pounds, to the acre being produced, some 600 bales in all, most of which found a ready market at the California Cotton Mills in Oakland. In 1910 some 12,000 acres were cultivated, producing 8,000 bales of excellent staple.

About 15,000 acres were planted in 1911, and according to the "Crop Reporter," the production was 11,000 bales, 500 pounds each.

According to the Horticultural Commissioner of Imperial County, in the season of 1913 just closed 26,000 acres were planted in Imperial County and across the line in Mexico, 21,500 acres were actually picked. Up to January 24, 1914, 16,726 bales had been ginned, with some 3,000 bales to come yet.

The value of the export of cotton grown in Imperial County, for the season of 1913-14, is estimated at about \$1,600,0

The new industry has called for the erection of eight gins, besides one or more cotton-seed oil mills.

Cotton-growing has proved a success also in the Coachella Valley, in Tulare and Kern Counties, and other points in the State where experimental planting of Egyptian cotton did well.

All the cotton produced in California will find a ready home market and probably cause additional factories to be added to the few already in operation in the State. The Japanese are already in the field as buyers of California cotton.

Flax and Hemp. The culture of these valuable textile plants has lately received an impetus in several localities that promises important developments. Growers have received \$120 and upward per ton, according to the quality and fineness of the fiber. The soil in some places along the Sacramento and San Joaquin Rivers is suitable for producing a fine quality of hemp. The California Cotton Mills of Oakland buy nearly all the hemp grown in this State, which is manufactured into twine of various kinds, for all of which there is a market in the State.

BEET SUGAR INDUSTRY

The beet sugar industry of the United States was originated in California, at Alvarado, Alameda County, and here as elsewhere grows yearly in importance.

In 1911-12 the acreage in California was about 101,000, the yield over 1,000,000 tons of beets and the output 162,538.4 short tons of sugar, leaving her in the lead of the beet sugar producing States with 35 per cent of the total production of the United States, 572,415 tons.

For the campaign for 1912-13 California with 100,612 acres, produced 980,894 tons of beets, had a sugar output of 155,432 tons of sugar, gave first place to Colorado, with 142,369 acres, 1,683,158 tons of beets and a sugar output of 223,181 tons. Lack of winter rains in California and an increase of 719,158 acres in Colorado can account for the difference.

"Sugar" (published in Chicago), gives the following estimate for California for 1913: Acres harvested, 115,330; beets worked, 1,100,397 short tons; sugar produced, 159,903 short tons. A California authority gives the production for 1913 at 169,258 short tons, of beet sugar.

The beet sugar factories in California are as follows:

Alameda Sugar Co., Alvarado.
 American Beet Sugar Co., Oxnard.
 American Beet Sugar Co., Chino.
 Sacramento Valley Sugar Co., Hamilton City.
 Spreckels Sugar Refining Co., Spreckels.
 Union Sugar Co., Betteravia.
 Anaheim Sugar Co., Anaheim.
 Holly Sugar Co., Huntington Beach.
 Santa Ana Co-Operative Sugar Co., Santa Ana.
 Southern California Sugar Co., Santa Ana.
 San Joaquin Valley Sugar Co., Visalia.
 Corcoran Sugar Co., Corcoran.
 Los Alamitos Sugar Co., Los Alamitos.

Of the above companies, all were in operation during 1913 except the Corcoran factory. Although Visalia ran their factory, it was only a short while and they manufactured very little sugar.

The plant at Spreckels in Monterey County is the largest beet-sugar factory in the world.

The average yield of sugar beets per acre and the average percentage of sugar in California beets is greater than in Colorado or Michigan. In some parts of California the soil and climatic conditions are superior for the cultivation of sugar beets. The large average percentage of sunlight is probably the main factor in the results obtained.

The growth of the industry in California is shown in the following exhibit for twenty-six years, beginning with 1888, that being the first year statistics were obtained and published by the State Board of Trade:

BEET SUGAR PRODUCTION OF CALIFORNIA—TONS OF 2,000 LBS.

Year	Tons	Year	Tons
1888	1,910	1901	68,700
1889	2,457	1902	73,761
1890	3,351	1903	65,360
1891	5,224	1904	59,147
1892	10,761	1905	64,251
1893	17,420	1906	94,285
1894	18,615	1907	72,889
1895	23,827	1908	99,613
1896	31,815	1909	126,621
1897	35,280	1910	144,747
1898	18,086	1911	162,538
1899	42,100	1912	155,432
1900	30,319	1913	169,258

Taken altogether the industry would be on a most satisfactory basis and bid fair to become one of the large money producers of the State if proposed legislation does not throttle it. But now the operators are at sea as to what the future will be.

MINERAL INDUSTRY

The value of California's mineral product for late years shows a steady increase mainly due to petroleum. The six years ending December 31, 1913, show values as follows:

1908	\$66,363,150	1911	\$ 87,497,879
1909	82,972,209	1912	91,472,385
1910	88,419,079	1913	100,000,000

We give below a comparative statement of the value of mineral products of California for the year 1912, and 1913 (estimated) furnished by the California State Mining Bureau:

MINERAL INDUSTRY IN CALIFORNIA, 1912-1913.

Substance	Value of output	
	1912	1913 (estimate)
Petroleum	\$41,868,344	\$46,000,000
Gold	19,713,478	20,000,000
Cement	6,074,661	8,000,000
Copper	5,638,049	5,500,000
Crushed rock and granite	5,473,928	6,000,000
Brick	2,940,290	3,000,000
Borax	1,122,713	1,250,000
Natural gas	940,076	1,250,000
Silver	799,584	800,000
Quicksilver	866,024	700,000
*Other minerals	6,035,238	7,500,000
Grand total	\$91,472,385	\$100,000,000

*Including asbestos, asphalt, barytes, bituminous rock, chrome, clay, coal, feldspar, fullers earth, gems, gypsum, infusorial earth, iron ore, lead, lime and limestone, magnesite, manganese, marble, mineral paint, mineral water, platinum, pumice, pyrites, salt, sand, sandstone, soapstone, soda, tungsten and zinc.

It is impossible for the estimated figures for 1913 to be more than a close approximation at this date, yet the work of gathering the data for that year has progressed to such an extent that the total of a hundred million dollars is known to be a conservative one.

1913 was generally known to be a "quiet" year, yet as far as the mineral industry of California was concerned, it recorded an unprecedented growth. The normal increase for the past few years has been at the rate of about \$2,000,000 per year. 1913 will show an increase of about \$8,500,000 over 1912, due, as will be seen from the above figures, principally to the increased value of petroleum and cement.

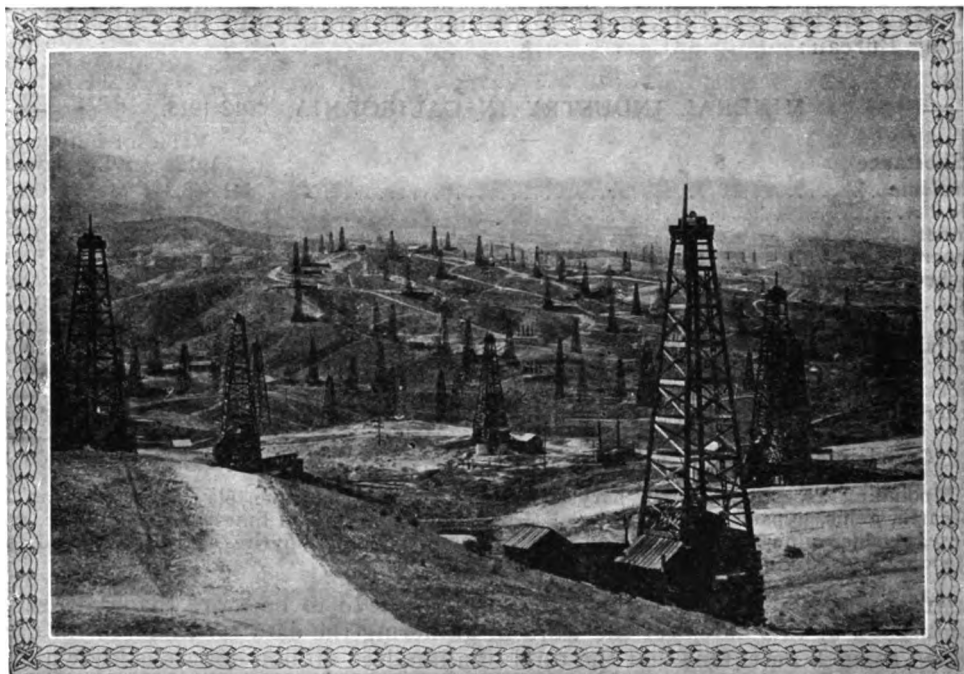
Some minerals which have had little or no production in the past, and which have been receiving considerable attention from capital recently, are: Bauxite, for the manufacture of aluminum; various iron deposits throughout the State; Barytes; Feldspar; Natural Asphalt; Potash and Nitre deposits; Tellurium, Vanadium and Magnesite.

Petroleum. The production of all the California oil fields for the year 1913, was as follows:

TOTAL PRODUCTION OF ALL CALIFORNIA OIL FIELDS, WITH WELLS COMPLETED AND WELLS PRODUCING IN JANUARY AND DECEMBER.

(From the "California Derrick.")

	Wells Completed	Wells Prod. Jan., 1913	Wells Prod. Dec., 1913	Total 1913 Production
Kern River	33	1,649	1,397	9,980,940
McKittrick	49	273	254	5,731,087
Midway and Sunset	241	939	1,214	39,024,973
Lost Hills and Belridge	80	52	185	4,040,085
Coalinga	64	880	867	18,604,597
Lompoc and Santa Maria	16	168	221	5,816,711
Ventura County and Newhall	37	380	409	1,022,117
Los Angeles, Puente and Salt Lake	17	743	682	2,915,334
Whittier-Fullerton	36	428	514	10,640,362
Summerland	...	122	122	62,365
Watsonville	2	....	....	27,375
Totals	575	5,638	5,870	97,865,946



A View Typical of the Great Oil Fields of California.

Courtesy "Sunset."

The U. S. Geological Survey for 1911 placed the world's consumption at over one million barrels per day. Of the total, 81,134,391 barrels (estimated) are credited to California. Special advices from local authorities give the California production for 1912 at 90,074,439 barrels, and in 1913 at 97,865,946 barrels.

The output of petroleum in California for the years 1900 to 1913 inclusive, from private sources, and the production of the United States from the U. S. Geological Survey, is as follows:

Year	California (barrels)	United States (barrels)	Year	California (barrels)	United States (barrels)
1900	4,000,000	63,620,529	1907	40,101,360	166,095,335
1901	8,000,000	69,389,194	1908	48,300,758	178,527,355
1902	13,973,500	88,766,916	1909	58,191,723	183,170,874
1903	24,337,828	100,461,337	1910	77,697,568	209,556,048
1904	24,423,860	117,080,960	1911	83,744,044	217,000,000
1905	34,275,701	134,717,580	1912	90,074,439	*222,113,218
1906	32,516,600	126,493,936	1913	97,865,946	*242,000,000

*Estimated.

Production of petroleum in the United States as above, shows a very material and constant increase during the last few years, due to the California production, and is an important factor in industrial and commercial development.

Though since 1900 the California production of oil has increased from 4,000,000 to over 90,000,000 barrels, the consumption keeps up with the increase and the storage was less in 1912 than in the two previous years. For December, 1912, the consumption was reported as 6 per cent more than the production during that month.

	Barrels		Barrels
Total production, 1913	97,867,183	Total production, 1912	90,074,439
Total consumption, 1913	97,083,728	Total consumption, 1912	83,409,630
Surplus	783,455	Surplus	6,664,809

According to the "California Derrick," the gain in production in 1913 was 7,792,744 barrels and gain in consumption, same year, 13,674,098. Total surplus, January 1, 1914, 47,870,177 barrels.

The diminished production of other fields presages a prosperous era for the California fields for some time to come.

California holds first rank among the States of the Union in the production of petroleum. The following table shows the production in the six principal producing States, which may be of interest:

State	Production by barrels (estimated)	
	1913	1912
California	98,000,000	86,450,767
Oklahoma	62,500,000	51,427,071
Illinois	22,000,000	28,601,308
Texas	14,000,000	11,735,057
Louisiana	12,000,000	9,263,439
West Virginia	11,000,000	12,128,962
Total production for the United States, 1912 (estimated)	barrels, 222,113,218	
Total production for the United States, 1913 (estimated)	barrels, 242,000,000	

The world's output of petroleum in 1911 amounted to 345,512,185 barrels, of which the United States produced 220,449,391 barrels, or nearly 64 per cent. Of this, California contributed about 30 per cent, and its output is increasing steadily.

According to "Bradstreet," the oil companies of California have returned to the stockholders over \$60,000,000 in dividends in the twenty years ended 1910.

PIPE LINES

To take care of California's great petroleum production a vast system of pipe lines has been constructed, a brief description of which may be of interest.

Four lines in operation are in the Coalinga field. The Standard Oil Company has two lines, one of 8-inch and one of 6-inch pipe, 133 miles in length, with terminals at Point Richmond on the Bay of San Francisco. The Associated Transportation Company has one 6-inch line in operation, 110 miles in length, with terminal at Monterey; also a line at Salinas, and another line of 8-inch rifled pipe in course of construction, which will be 198 miles long when completed, from Coalinga to the terminal at Port Costa. The Producers' Transportation Company has just completed (March, 1910) and put in operation an 8-inch pipe line from Coalinga to Port Harford, 100 miles in length, which makes a junction in the Devil's Den District with a line coming north from McKittrick, Midway and Bakersfield. It is said that the pipe line from the junction to Port Harford will soon be doubled. Shipments of crude oil are also made from this field by railroad.

The Associated Pipe Line Company has an 8-inch rifled line extending from the Kern River field to Port Costa, and the Standard Oil Company has lines running from this field to Point Richmond, a line from the Midway field connecting with them. The field is also tapped by the Southern Pacific Railroad. The crude petroleum produced in the McKittrick and Sunset fields in 1909 was shipped by rail.

Three pipe lines transport petroleum from the Santa Maria oil field. The Union Oil Company has two lines, one of 6-inch and one of 8-inch pipe, from Orcutt and Lompoc to Port Harford. The Standard Oil Company has an 8-inch line to Port Harford and the Associated Transportation Company has an 8-inch line to Gaviota. Shipments are also made from this field by rail from Careaga, Orcutt and Palmers.

FOREST PRODUCTS

The lumber cut of California for a series of years since 1880, as given by the U. S. Government reports, presents some interesting contrasts of amount of production.

CALIFORNIA DEVELOPMENT BOARD

LUMBER CUT IN CALIFORNIA FOR YEARS FROM 1880 TO 1913.

(From Government Report)

	M. Feet		M Feet
1880	304,795	1908	966,115
1890	515,823	1909	1,144,000
1900	734,232	1910	1,270,000
1905	1,077,499	1911	1,207,000
1906	1,348,599	1912 (approximately)	1,140,000
1907	1,345,943	1913 (approximately)	1,230,000

The cut for 1912 and 1913, estimated from mill reports, cargo shipments and other sources of information, is given approximately.

KINDS OF LUMBER CUT IN CALIFORNIA, 1910.

(Quantities approximated)

Kinds	1910—feet
Redwood	600,000,000
Western pine or white	350,000,000
Douglas fir	110,000,000
Sugar pine	100,000,000
White fir	60,000,000
Spruce	30,000,000
Cedar	15,000,000
Western hemlock	1,000,000
Oak	1,000,000
Ash and other	3,000,000
	1,270,000,000

In addition to absorbing most of the home production, California received by sea in 1913 a total 1,339,000,000 feet, of which 657,000,000 feet were delivered in San Francisco Bay and 682,000,000 feet at Southern California ports. There was also shipped into the State by rail from the north large amounts of lumber, figures for which are not available. Outside receipts consist almost entirely of fir or Oregon pine.

The timber area of the State is approximately 15,000,000 acres, of which about 10,000,000 is government owned and within its National Forest Reserves, whose boundaries embrace approximately 27,000,000 acres; the other 5,000,000 acres of forest is private ownership.

Forest Protection. The protection of the wooded areas of the State is intimately associated with its welfare. More particularly is this protection necessary to the great irrigation and hydro-electric interests.

The Federal Forest Service is admirably protecting the great national reserves under its control. The private owners are awakening to their responsibilities and have a strong State organization—the "California Forest Protective Association"—encouraging protection, both individually and through local associations.

It should not be forgotten, however, that our so-called destructive forest fires are to an extent a misnomer and that the fires are largely on watersheds covered with brush and a scanty growth of timber rather than in the forest proper. However, this cover growth is equally as important to the protection of watersheds as the forests themselves.

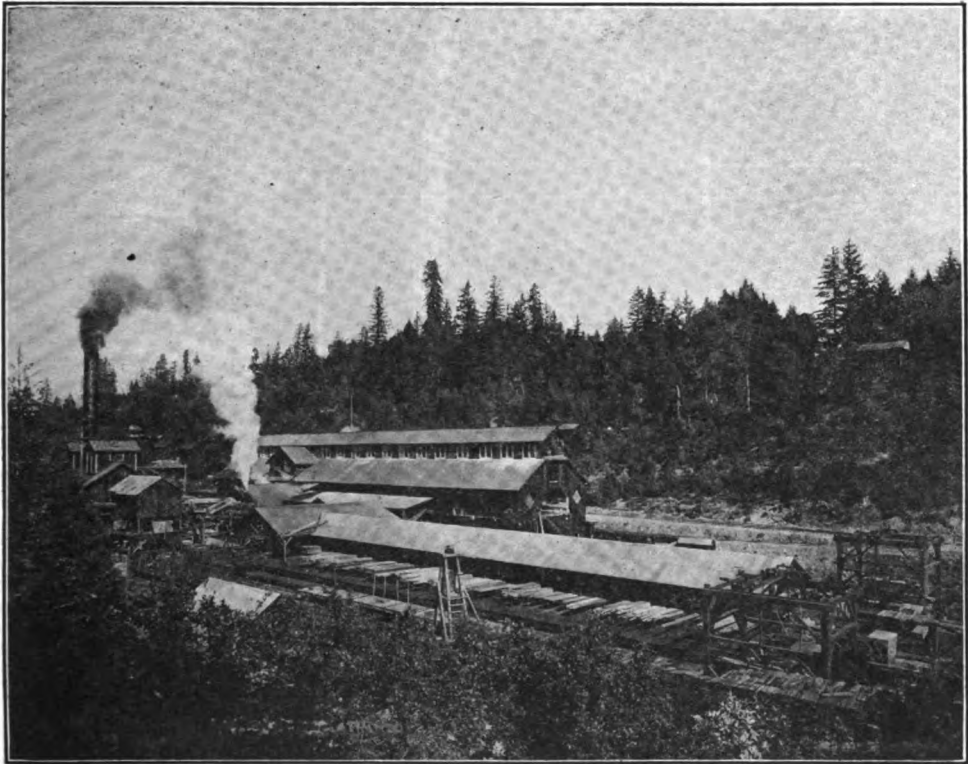
Redwood. It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "clear lumber." The redwood (*Sequoia Sempervirens*), is indigenous to California, and except for a few stunted trees in Japan is found in no other country.

The redwood forest extends from the California-Oregon line southerly along the coast about 240 miles, a narrow belt 10 to 20 miles wide, on the west the Pacific Ocean and on the east the divide of the low Coast Range.

The following figures taken from the "Lumber Record Bureau" give the annual shipments from the California mills north of San Francisco Bay since and including 1900:

	Feet		Feet
1900	209,001,022	1907	437,514,653
1901	244,386,075	1908	356,549,880
1902	262,597,015	1909	402,519,307
1903	301,343,953	1910	446,097,661
1904	324,676,960	1911	444,925,778
1905	347,679,159	1912	477,330,460
1906	409,702,576	1913	404,583,279

To the above cut should be added approximately 100,000,000 feet going into shingles, shakes, split ties, posts, pickets, etc., and at least 25,000,000 feet manufactured in the Santa Cruz Mountains.



Sawmill in the Redwood Belt.

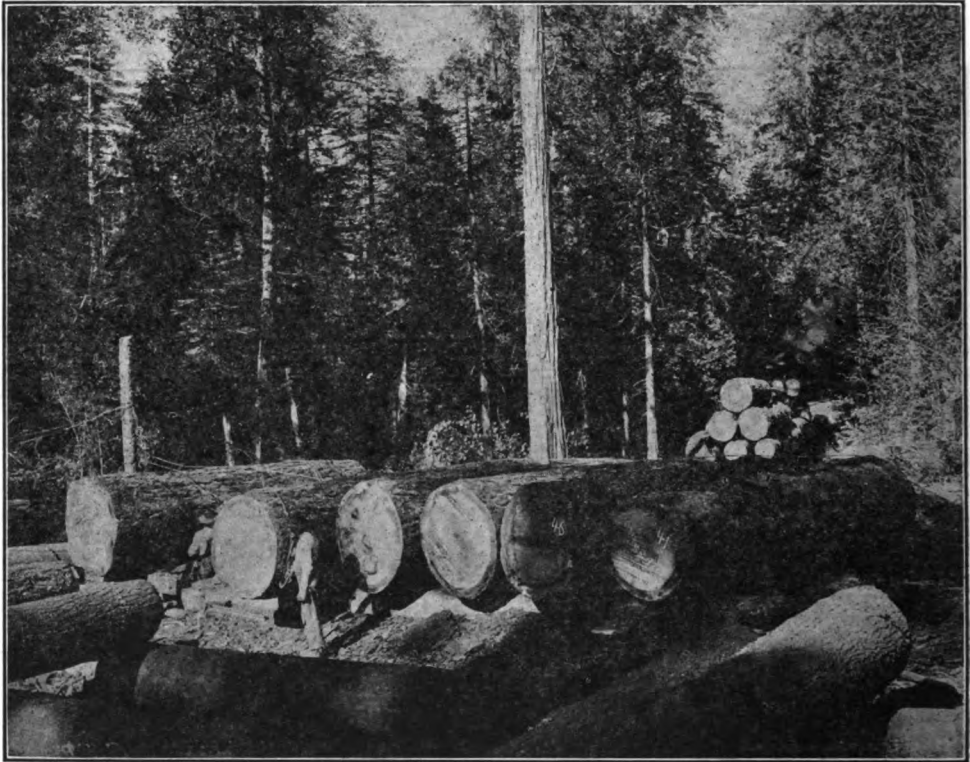
The redwood is peculiarly the poor man's timber. Owing to its straight grain and easy splitting qualities, expensive saw mills and logging outfits are not necessary to putting the timber into marketable condition.

A falling axe, wedges and broad-axe enables the individual worker to fall and work the great trees into ties, posts, shake, pickets and grape stakes, all of which products find a ready market at remunerative prices at the nearest shipping point. Hundreds and thousands of small timber owners thus make their living at the same time clearing their land.

Another product of the so-called redwood belt is the bark from tan oak, of which from 25,000 to 30,000 cords are peeled annually, of a value of from \$400,000 to \$500,000 at the shipping point.

Pine. The pine forests of California extend from Kern County to the northern boundary of the State in the Sierra Nevada Mountains, with an average width of perhaps twenty miles and from Lake County to the northern boundary of the State on the eastern slope of the Coast Range. There are also small areas in the San Bernardino Mountains.

The total area of merchantable pine timber is approximately 8,000 square miles. The most valuable trees are the sugar pine (*Pinus Lambertiana*), the white pine (*Pinus Ponderosa*) and the Jeffrey pine. Other valuable trees which occur in these forests are Douglas fir, white fir, spruce, cedar and Western hemlock.



Pine Logs Ready for the Mill.

The woods from these trees are meeting with a steadily increasing demand in the wood manufacturing industries of this country and the entire world. They are unsurpassed for doors, sashes, interior finish, flooring, ceiling, patterns, piano key boards, lead pencils and for many other purposes where strength, durability, stability, ease in working and beauty of finish are required.

There are many great plants in all parts of the State. The great railroad lines carry their product to every part of the United States. The work of lumbering is practically the same as in the redwood districts, steam machinery as a rule getting the logs to the mills, although in some instances ox teams are still used. Here, as in the redwood country, there are immense log ponds where the logs are stored away for the mills. The cut has run from 400,000,000 to 500,000,000 feet a year.

Saw Mills. According to the census of 1910, and the figures are approximately the same for 1913, there were 644 saw mills scattered through the timber sections of the State. These saw mills employed over 25,000 men, and paid over \$16,000,000 in wages. They expended over \$18,000,000 for materials and \$6,000,000 for other manufacturing costs.

The total value of the products was \$45,000,000, which was nearly 50 per cent greater than the output of the canning and preserving industry, the next greatest manufacturing industry.

The third in importance among the manufacturing industries in the State was foundries and machine shops, with a product of \$26,000,000, and the fourth was flour mills and grist mills, with a product of \$25,000,000.

From this it will be seen that the value of the products of the saw mills is almost as great as the combined value of the output of the foundries and flour mills.

RAILWAYS

The year 1912 saw notable progress in railroad extension and betterment in California. In 1911 in new electric construction, California led with 121 miles, followed by North Carolina and Illinois, with 104 miles each. The progress during 1913 was not so great, but during the year ending June 30, 1913, the additional mileage built included 243.12 miles of steam railroads and 147.12 miles of electric railroads.

The following will give the facts relating to railway progress in California, furnished by Railroad Commission of California:

TOTAL TRACK MILEAGE ON JUNE 30, 1913.

Steam Roads		
Name of road		Mileage
Southern Pacific Co.		9,167.82
Atchison, Topeka & Santa Fe Ry.		2,112.41
Northwestern Pacific R. R. Co.		526.48
San Pedro, Los Angeles & Salt Lake R. R.		512.10
Western Pacific Ry. Co.		497.70
Nevada Cal. & Oregon Ry.		249.68
Tonopah & Tidewater R. R.		192.08
Pacific Coast Railway Co.		115.68
Sunset Railroad Co.		110.44
McCloud River R. R. Co.		97.34
San Diego & Southeastern Ry. Co.		94.31
Yosemite Valley Railroad Co.		88.26
32 other roads in California		836.95
Total steam railroad mileage in California.....		14,601.25
Electric Railways		
		Mileage
Pacific Electric Railway Co.		982.46
Los Angeles Railway Corp.		376.25
United Railroads of San Francisco		271.28
San Francisco Oakland Terminal Rys.		256.18
Northern Electric Ry. Co.		149.25
Oakland, Antioch & Eastern Ry.		91.52
Central California Traction Co.		78.50
Peninsular Railway Co.		70.80
San Diego Electric Ry. Co.		63.49
Visalia Electric R. R. Co.		45.95
San Francisco, Napa & Calistoga Ry.		44.52
Petaluma & Santa Rosa Ry.		42.96
20 other railways in California		338.87
Total electric railway mileage in California.....		2,812.03

The amount of money invested in California railroads is out of all proportion to the mileage, for one mile in the mountains costs more than twenty miles in the Prairie States.

CALIFORNIA DEVELOPMENT BOARD

MANUFACTURING

(U. S. Census Report, 1910)

SUMMARY FOR THE STATE, 1909

	Census, 1909	Per cent of increase 1904-1909
Number of establishments	7,659	12
Capital	\$537,134,000	90
Cost of materials used	\$325,238,000	51
Salaries and wages	\$107,097,000	35
Miscellaneous expenses	\$43,819,000	61
Value of products	\$529,761,000	44
Value added by manufacture (products less cost of materials) ..	\$204,323,000	35
Employees—		
Number of salaried officials and clerks.....	18,203	48
Average number of wage earners employed during the year.	115,296	15
Primary horsepower	329,100	56

Following are tables compiled to show the growth of manufacturing between 1850 and 1909:

CAPITAL INVESTED

Year	Amount	Increase over previous decade
1850	\$ 1,006,197	.....
1860	22,043,096	2097.7
1870	39,728,202	80.2
1880	61,243,784	54.2
1890	146,797,102	139.7
1900	205,395,025	39.9
1909	537,134,000	161.5

VALUE OF PRODUCTS

Year	Amount	Increase over previous decade
1850	\$ 12,862,522	.....
1860	68,253,228	430.6
1870	66,549,566	-2.4
1880	116,218,973	74.5
1890	213,403,996	83.6
1900	302,874,761	41.9
1909	529,761,000	74.8

	San Francisco		Los Angeles		Oakland		Sacramento	
	Census 1909	Per cent of increase, 1904-1909	Census 1909	Per cent of increase, 1904-1909	Census 1909	Per cent of increase, 1904-1909	Census 1909	Per cent of increase 1904-1909
Number of establishments..	1,795	— 20	1,325	63	441	78	211	35
Capital	\$183,760,000	31	\$59,518,000	111	\$19,113,000	109	\$10,097,000	37
Cost of materials used	76,175,000	*	38,913,000	108	11,847,000	175	6,893,000	34
Salaries and wages	30,452,000	— 4	16,500,000	82	6,618,000	167	4,534,000	34
Miscel. expenses	13,053,000	5	5,649,000	106	2,094,000	145	1,356,000	77
Value of products	132,929,000	— 4	68,586,000	97	22,343,000	148	18,977,000	39
Value added by manufacture (products less cost of materials)	56,754,000	— 8	29,673,000	84	10,496,000	123	7,084,000	44
Employees:								
Number of salaried officials and clerks...	6,118	18	3,367	68	1,079	177	533	42
Average number of wage earners employed during year	28,239	— 27	17,327	66	6,905	106	4,514	7

—Decrease.

*Less than one per cent increase.

OTHER PRINCIPAL MANUFACTURING POINTS

	Fresno	Stockton	San Jose	Richmond	San Diego	Eureka
Number of establishments...	76	144	153	25	117	48
Capital	\$4,933,000	\$8,250,000	\$ 3,815,000	\$14,550,000	\$5,326,000	\$3,306,000
Salaries and wages	\$1,431,000	\$1,681,000	\$1,152,000	\$2,760,000	\$1,069,000	797,000
Wage earners	1,936	1,594	1,430	3,420	1,071	946
Value of output	\$11,090,000	\$11,849,000	\$5,610,000	\$11,256,000	\$4,741,000	\$3,012,000

NOTE: Pending the next taking of the Manufacturing Census by the Government, it is safe to estimate that the above figures have increased from 15 to 25 per cent.

CALIFORNIA'S WATER POWER

Water-Power and Electrical Development. Closely connected with the future of manufacturing development is the fuel and water-power supply convertible into electrical power. The statistics of oil production are given on a preceding page. The following extract from Water Supply Paper No. 234, in the report of the U. S. Geological Survey is of much interest:

CALIFORNIA'S WATER POWER, 1909.

Developed			Undeveloped		
Source	Wheels	Horsepower		Minimum	Maximum Developm't
Sacramento River	576	280,735	Sacramento River	2,420,000	4,580,000
San Joaquin River	159	86,224	San Joaquin River (in-		
Minor streams, southern	74	50,183	cluding Tulare Lake		
Minor streams, northern	176	25,440	drainage)	759,000	3,140,000
Sierra Nevada drainage.	74	17,737	Minor streams, northern	600,000	1,200,000
San Francisco Bay	11	6,455	Sierra Nevada drainage	132,000	202,000
			Minor streams, southern	36,400	88,300
Totals	1,070	466,774	Totals	3,947,000	9,210,300

The following is taken from an address delivered by Mr. John A. Britton, who is a leading authority on this subject:

The State of California can claim the honor of having been pioneer in hydro-electric development. The first plant operated in the State followed closely the first one operated in the world, which was at Frankfort-on-the-Main in 1894, and the first commercial hydro-electric high-tension transmission in the State was the plant erected in the town of Folsom and supplying the city of Sacramento; this occurred in the year 1895. The voltage of the line was 11,000; the fall of water 56 feet. To-day developments are in operation carrying on lines as high as 150,000 volts, and operating at heads of over 2,000 feet, or at a pressure of approximately 875 pounds per square inch.

In the 155,000 square miles embraced within the State of California there are to-day sixteen companies operating and supplying electrical energy to the people of this State. The total horsepower installed in all of the 84 plants is 978,823, serving 596 cities and towns. These plants have a total valuation of \$301,502,506.02, with securities outstanding in the hands of the public, both here and abroad. There is paid annually to the bond-holders \$7,723,962.02, while the stockholders, the real owners of the plants, received in dividends in the year 1913 but \$2,849,433, a return of less than two per cent on their equity. There was paid by these corporations in the year 1913 to the State of California in taxes the sum of \$1,174,109.10. There are 111 reservoirs in use, holding and impounding a total capacity of 31,424,352,971 cubic feet of water, equalling 251 billion gallons, or sufficient to last the city and county of San Francisco, on its present rated consumption of 50,000,000 gallons per day, 15 years. In their activities these companies employed during the year 1913 an average of 12,000 people, representing an annual expense in labor of \$12,500,000. The total load connected upon the lines of these companies for power purposes only amounts to 631,000 horsepower, and its lighting load represents in horsepower demand 464,707, making a grand total of 1,096,597 horsepower which these companies stand ready to serve at any moment of the day; and the above-mentioned load is connected on the premises of 392,741 consumers.

It is of record that the reduction in rates charged to consumers of electrical energy in this State since 1903 amounts to an average of forty per cent.

California has not hitherto been classed among the States in which manufactures was a leading industry, but with abundant oil for fuel for manufacturing power and motive-power on the one side, and with 9,000,000 horsepower in water-power maximum development and a widening of markets both at home and in the Orient, California can face her industrial future with confidence.

SUMMARY OF VALUES

Summary of the farm, packing-house and factory values of products of California's soil and connected industries for 1913, marketed by the producer and for the most part shipped out of the State. Consumption by the producers not included except in case of animals slaughtered by rural population.

Compiled from data gathered from growers, dealers, distributors and other authoritative sources.

Orchard products:

Fresh deciduous fruits, not including apples	\$11,000,000	
Apples	2,021,120	
Citrus fruits (Sept. 1, 1912-Aug. 1, 1913)	21,000,000	
Dried fruits and raisins	15,000,000	
Prunes	4,950,000	
Canned fruits and vegetables	17,500,000	
Olives and olive oil	2,500,000	
Nuts	3,825,000	\$77,796,120

Vineyard products:

Table grapes	\$ 7,000,000	
Raisins	4,875,000	
Wine and Brandy	15,000,000	26,875,000

Garden products, fresh		9,842,000
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Dairy and poultry products:

Dairy products	\$34,950,552	
Poultry products	18,205,896	
Honey, wax, etc.	600,000	53,756,448

Farm products:

Barley	\$22,542,000	
Wheat	3,990,000	
Oats	3,980,000	
Corn, Rye and Rice	2,167,000	32,679,000

Farm products (continued):

Grain, grass hay and alfalfa	\$48,600,000	
Hops	4,250,000	
Sugar beets (paid growers, \$4,923,000)	13,324,000	
Broom corn, tobacco, etc.	230,000	66,404,000

Other field crops:

Potatoes	\$ 9,720,800	
Potatoes, sweet	1,200,000	
Beans	6,975,000	
Onions	2,750,000	
Seeds and sundry others	2,500,000	
Melons	2,600,000	
Cotton	1,690,000	27,435,800

Fish industry:

Coast and interior (cod, tuna and sardines)	\$ 3,678,534	
Salmon fisheries, etc.	7,000,000	10,678,534

Forest and lumber products (estimated)		40,000,000
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Petroleum (estimated), 97,865,946 barrels.		46,000,000
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Mineral products, other (estimated):

Gold	\$20,000,000	
Cement	8,000,000	
Copper	5,500,000	
Other minerals	20,500,000	54,000,000

Farm animals and products:

Increase over 1912 (U. S. Farmers' Bull.)	\$33,834,300	
Slaughtered for market in cities	20,000,000	
Slaughtered in rural districts and towns	18,150,000	
Other animal products	5,600,000	77,584,300

Sundry others, not included above:

Nursery products	\$ 3,250,000	
Florist products	900,000	
Fruits marketed in cities	9,500,000	
Vegetables marketed in cities	18,750,000	
Cider, vinegar, etc.	2,200,000	31,600,000
Total		\$554,651,202
Manufactures (as reported by Census 1910)		529,761,000
Manufactures (increase 3 per cent, 1913)		26,488,050
Grand total		\$1,110,900,252

ROBERT NEWTON LYNCH,

A. L. McDONALD, Statistician.

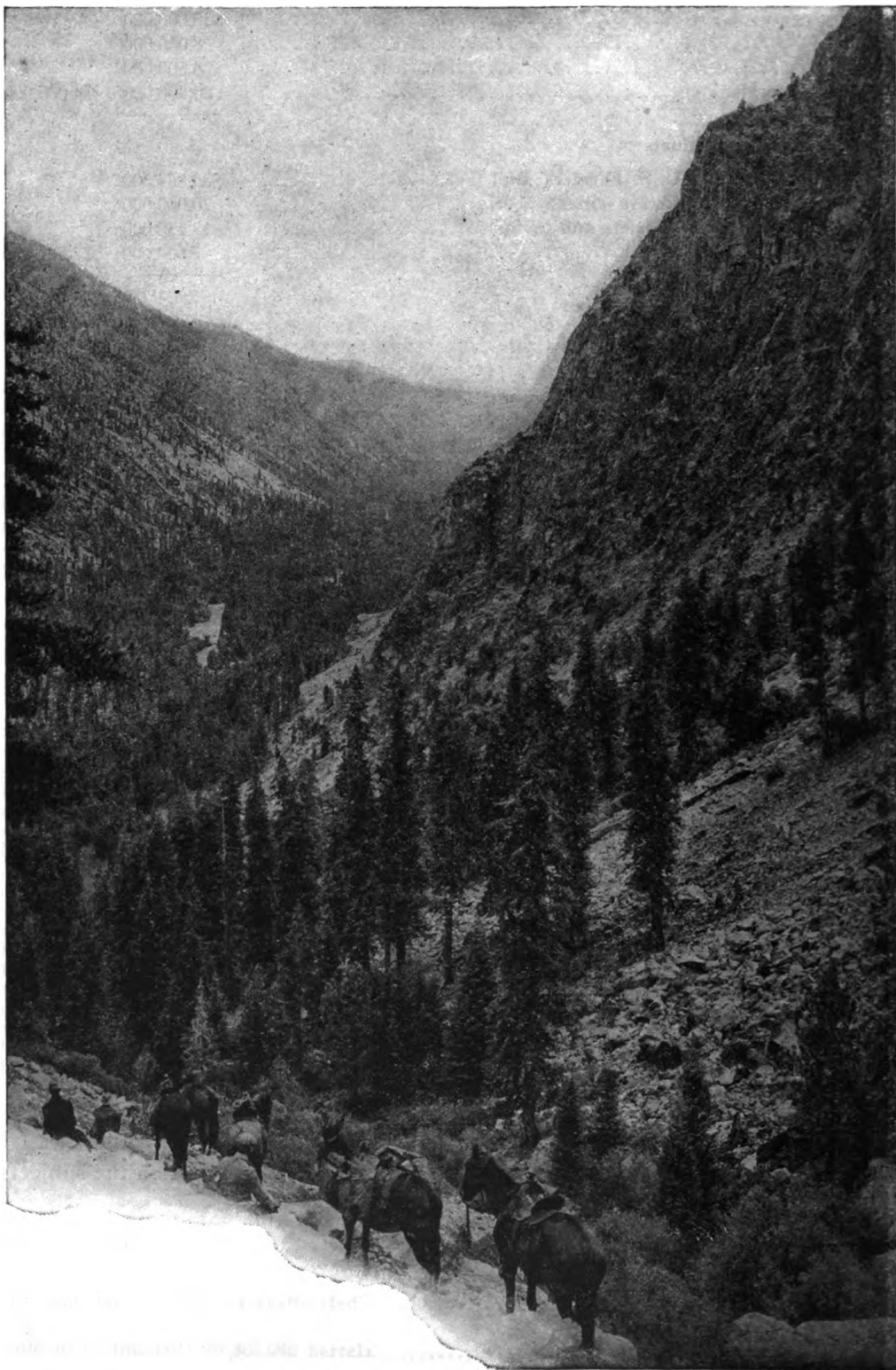
Vice-President and Manager.

Approved by the Board and ordered printed.

NOTE: For date and statistics used in this report, we are indebted to the following: Mr. G. H. Willson, California Section U. S. Weather Bureau; U. S. Department of Agriculture; State Statistician; State Superintendent of Banks; State Mining Bureau; State Controller; San Francisco and other Clearing Houses; State Dairy Bureau; California Forest Protective Association; State Railroad Commission; Auditing and Freight Departments of Southern Pacific, Santa Fe and Western Pacific Railways; Wine and Spirit Review; Petaluma Poultry Journal; California Fruit Grower; Western Canner & Packer; Pacific Rural Press; Frank D. Flint & Co.; Wolf, Netter & Co.; Adolph Koshland; T. A. Burns; E. H. Tryon; Alaska Packers' Association; Pacific Fisherman; J. K. Armsby Co.; Frank Adams, Irrigation Manager Agricultural Experiment Station, University of California; San Francisco Chronicle; Sunset Publishing Company; the several beet sugar refineries; Chambers of Commerce and other local organizations of various counties; Boards of Supervisors of counties; Mr. Horatio Stoll of the California Grape Protective Association; California Fruit Growers' Exchange; building inspectors of principal cities of State; Boards of Harbor Commissioners, at San Francisco, Los Angeles and Eureka; U. S. Custom Service, San Francisco; Postmaster, San Francisco; Pacific Fruit Express Company; American Olive Co.; "Sugar" of Chicago; U. S. Census Reports; Jas. A. Barr, Panama-Pacific International Exposition; California Derrick; Biggs Rice and Land Co.; and many growers, producers and others throughout the State.

APPENDIX

The appended articles are furnished by recognized authorities on the subjects treated, and answer many inquiries of homeseekers.



The Descent to Kern River Canyon from the Chagoopa Creek Trail
Courtesy "S. P. Co."

CLIMATE OF CALIFORNIA

By Judge N. P. Chipman, Sacramento.

California must be counted among the most valuable possessions of the United States for many reasons; chiefly, however, because of the matchless climate of the State and the high economic value it bestows upon a large area of arable land whose coast line measures 850 miles from point to point (about 1,000 miles of actual coast), the average width of the State being about 200 miles. The south boundary line of latitude emerges on the Atlantic Coast near Savannah, Georgia, and the north parallel near Boston, Massachusetts. Between these two latter points lie ten States of the Union. It accounts for something to the nation that this extended coast line, on the Pacific Ocean, is fortified by a region capable of supporting many millions of people and that the coast to the Canadian boundary is backed by a country of almost boundless resources.

It is not generally appreciated that all of France, all of Italy north of Rome, and half of Spain lie **north of the north boundary of California**. This relative position on the west coast of our continent would suggest a mild climate, but not necessarily its unique and exceptional character. It is the purpose of the writer to bring to public attention the principal features of this climate and to show its economic value.

Professor Alexander G. McAdie, former District Forecaster of the United States Weather Bureau for California, stated that the climate of California is controlled by four great factors: (1) The movements of the great continental and oceanic pressure areas (commonly called "high" and "low"), together with the movements of individual pressure areas; (2) the prevailing drift of the atmosphere in temperate latitudes from west to east; (3) the proximity of the Pacific Ocean, with a mean annual temperature near the coast line of 55 degrees, Fahrenheit, a great natural conservator of heat, to which is chiefly due the moderate range of temperature along the coast from San Diego even to Tatoosh Island (extreme northwest coast of Washington); and (4), the exceedingly diversified topography for a distance of 200 miles from the coast inland. To this diversified topography is due the fact that California is a land of many climates, "from the hottest sub-tropical to the cold temperate, and from the driest desert to the most humid regions of the higher mountains and northern coast."

The Sierra Nevada Mountains form a natural boundary line on the east, rising gradually from the west to a height of from 8,500 to 14,000 feet, much above the snow-line, and falling off to the Nevada plateau, which is about 4,000 feet above sea-level. The Coast Range Mountains form a broad belt, traversing the entire coast, and consists of two or three parallel ranges from 3,200 to 5,000 feet high, and between these ranges are many rich valleys, some of large extent. The Coast Range emerges into the Siskiyou Mountains on the north, a connecting link with the Sierra Nevada, crowned by Mount Shasta; and the Tehachapi Mountains, far to the south, form another connecting link.

Between the Sierra Nevada and the Coast Range Mountains and these connecting mountain links lies the great central valley of California, about 400 miles long and from 50 to 60 miles wide; an agricultural district of great fruitfulness, comprising quite one-ninth of the State. There is but little waste land in it. The northern portion is blessed by ample rainfall, and the southern part, when watered, is everywhere very productive, as is the entire valley. The Sacramento River runs south through the northern portion (Sacramento Valley), rising near Mount Shasta; the San Joaquin River runs north through the southern portion (San Joaquin Valley); the two rivers uniting near the middle of the great valley and flowing westward into San Francisco Bay, and thence through the "Golden Gate" into the Pacific Ocean.

There is here a wide break in the Coast Range through which the summer trade winds find their way into the interior, an important factor in the climatic con-

ditions of the valley. The sea-breeze blows up stream, north into the Sacramento Valley and south into the San Joaquin Valley, thus tempering the heat of the great valley. This influence, together with the dryness of the atmosphere, renders the occasional high temperatures of these two valleys more easily endurable at 110 degrees than is 95 degrees in the humid regions of the Eastern States.

South of the Tehachapi Mountains the Sierra Nevada Mountains continue at less elevation, and are locally called Sierra Madre. The wonderfully developed region known as Southern California lies west. On the east is the Majave desert, and south and east the Colorado desert; important regions of the State are yet but partially developed, but of great fertility by the application of water, which the genius and enterprise of the people are rapidly bringing in touch with the land. As in the north, the breaks in the Coast Range and in the Sierra Madre become important factors in modifying the climate of the interior. In Southern California and in Central California (San Joaquin Valley) extensive irrigation systems already in operation supply the comparative lack of rainfall. Irrigation is also being extensively developed in the Sacramento Valley.

Winds. The prevailing winds come from the ocean and are principally from the southwest landward, producing a cool summer climate along the immediate coast. Fogs sometimes sweep in from the ocean, more or less unfavorably affecting the enjoyment of the climate, but by their moisture contributing to the growth of vegetation. These fogs are less harsh on the south coast. The heat rising from the great valley draws a strong current from the trade winds through the Golden Gate that divides as it passes and extends south to the Tehachapi Mountains and north to Mount Shasta, rendering the air of the valley more delightful. The same drift of the trade winds tempers the air far into the interior of Southern California. The high mountain barrier on the east, through the length of the State, deflects the cold winds that sweep down over the Nevada plains in winter from Alaska and prevents their entrance into the valley regions of California. Dry north winds sometimes blow through the great valley in summer, raising the temperature, and are occasionally injurious to growing crops, but they seldom continue more than three or four days, when they are succeeded by the balmy and cool ocean breezes. Along the immediate coast the average winter and summer temperature differs only about four degrees, and one of the characteristic features of the San Francisco climate is exemplified by the sight of furs worn by ladies over summer garments, and fires in summer are not infrequent.

All over the coast, however, there are thousands of sheltered nooks and small valleys and sequestered spots where the fogs and harsh winds of the coast have no appreciable effect and where the climate is charming and sunny to the last degree, both in winter and summer.

Rainfall. The terms "winter" and "summer," as commonly used in the Eastern States, have no application in California. The year is more properly divided into "rainy season" (winter) and "dry season" (summer). Practically all the rain falls from about the first of November until April; the remaining months of the year are rainless, except in some parts of the mountains and on the Coast north of Cape Mendocino, where occasional summer showers occur. Cereal crops mature in early summer after rain ceases, and no housing of crops is necessary for protection against rain in harvest time.

The rainfall of California is a characteristic feature of the climate. A word as to its source and cause will be interesting. Professor McAdie points out that over the North Pacific Ocean in winter there exists an area of low barometer (latitudes 40 and 60 degrees north and 130 degrees west to 140 degrees east longitude), while an area of high pressure overlies the greater part of North America with a southwest extension to the tropics and west to the one hundred and six-

tieth meridian. He says: "We shall find that typical wet winters on the California coast occur when this great North Pacific 'low' extends well eastwards, overlying the continent west of a line drawn from San Francisco to Calgary (Canada). At the same time the great continental high area apparently recedes to the south-east. On the other hand, the pressure distribution characteristic of a 'dry' winter on the California Coast is marked by the prevalence of the continental 'high' over the entire country west of the Rocky Mountains."

Our winter rain storms (barring an occasional one coming in from the ocean unheralded) have their origin off the coast of Vancouver, and curiously enough are attended in the Sacramento Valley by south winds. The storms diminish in intensity as they travel south, tapering off as they approach Southern California.

The Weather Bureau record for 1913 shows the great variations of rainfall within the State, and even within the great valley. For example, the rainfall at Eureka, Humboldt County, on the immediate coast, was 33.80 inches, and at San Diego but 7.30 inches. At Redding, Shasta County (interior), the rainfall was 36.96 inches; at Red Bluff, forty miles south, 25.77 inches; at Sacramento, 14.29 inches; Fresno (center of San Joaquin Valley), 8.69. In the Sierra Nevada Mountains the rainfall increases about one inch for every hundred feet elevation. The rainfall south of the Tehachapi Mountains (Southern California) is greater than at the extreme southern portion of the San Joaquin Valley.

The direction of the Coast valleys exerts striking influence upon rainfall and temperature, dependent upon the facility for the trade winds to reach them. The climatic and agricultural character of the foothills, up to 2,000 or 2,500 feet, is much the same as in the valley, although the character of the soil is different. Even higher, fine deciduous fruits are grown. Still higher are the lumbering and mining camps, and thousands of cattle and sheep are herded in summer, where in winter the mountains are deeply covered with snow. Illustrative of the characteristic variations of climate, it may be stated that in the vicinity of Summit, Placer County, elevation 7,017 feet, the temperature was 4 degrees below zero, and the snowfall for the year was 245.1 inches. At Rocklin, Placer County, 30 miles west, elevation 249 feet, the lowest temperature was 20 degrees above zero. All the natural ice consumed in California was made near Summit, while oranges were being gathered for market around Rocklin.

Temperature. The foregoing table shows not only temperature, but also rainfall, elevation of points above sea, clear and cloudy days. I have taken illustrative points in Northern and Central California, the Coast country and the mountains. It will be noted that while the annual mean temperature of the Pacific Coast does not differ greatly from the annual mean of the Atlantic Coast, the average summer and average winter here and on the Atlantic Coast are wide apart, and the extremes between the highest and lowest temperature are here not very great. It is this exemption from extremes of temperature that constitutes the charm, and healthfulness as well, of the Pacific Coast.

In the interior, especially in the great valley, the seasons show greater extremes of temperature, but, as already suggested, the dryness of the air renders these extremes less felt than on the Coast where the air is more moist. The limit of winter cold is the test of what may be grown rather than the average temperature.

And so we find citrus fruit flourishing from the north to the south end of the great valley, and orange growing is a leading industry in several counties of that valley. In Southern California both the heat and the cold are comparatively milder, although the readings of the thermometer do not much differ from the points north of the Tehachapi. It is shown by the table that there were 215 clear days in San Jose as against 193 in Los Angeles during the year, although there were more rainy days in San Jose. Abundant sunshine is also found in the interior. For example, Sacramento, in the north, had 256 clear days, and Riverside, in

the south, 212. In truth, the California of "sunshine, fruit and flowers" is pretty nearly the whole State, below high mountain elevations.

Climate Unchanging. As far back as we have any recorded history, and behind this, embracing traditions coming through the early Mission fathers, we learn of the same equability of temperature, the same balmy atmosphere, the same luxuriance of vegetation. Our soil may require renewing by fertilization, but our climate is as constant as the sun. The conditions which have produced the result are themselves unchanging, and so must be the result.

It is Health-Giving. California is a universal sanitarium. The climate of the Coast is invigorating, stimulating and delightful, neither hot nor cold; the laborer knows no fatigue except from physical exhaustion resulting from over-taxed muscles. The brain worker yields only to failure of mental powers. In the interior valleys in midsummer, the temperature is higher, and there is discomfort at time while working in the harvest fields and at the desk and behind the counter. But the dryness of the air robs the thermometer of much of its terror. The sensible temperature, i. e., the temperature we in fact experience or feel in the valleys, is less irksome at 100 or 110 degrees than in regions of greater humidity of the atmosphere where the reading is from 85 to 95 degrees. Sunstroke here is unknown. It is the common experience of persons coming into almost any part of the State that they increase in weight and strength, are less troubled with nervous affections, sleep and eat well, and improve in health if ailing from any cause.

Source of Happiness. The variety of temperature and climatic conditions existing in the mountains, valleys, and on the Coast, and the celerity and ease with which our inhabitants may change their immediate surroundings, constitute one of the great charms of California life. Thousands of families residing in the valleys find their way into the mountains or to the seacoast and have most delightful camping-out experiences; and this they do in a few hours or a day or two at most, with their own conveyances. Our valleys and mountains lie so related to each other that no spot can be found devoid of scenic beauty. There is no dull monotony in the farmer's life as there is from necessity in the lives of those who reside on the great plains, regions of the West, few of whom are ever permitted to enjoy the inspiring and elevating means of recreation and rest from labor which are a part of our life here.

Some Peculiarities. Degrees of latitude cut little figure in determining the readings of the thermometer, which is not at all true on the Atlantic Coast and in the West. The foregoing table tells the story from official sources for 1913 and is valuable as covering the whole distance and intermediate points, from San Diego, near the south line of the State, to Hornbrook, Siskiyou County, near the Oregon line, nearly ten degrees of latitude apart.

The fact that latitude has little to do with our climate is a remarkable feature. It is not true of Italy, for there is a great variation there between the temperature north and south. It is not true of France or elsewhere along the west coast of Europe. We believe this to be a peculiarity unique and found only on this Coast. This peculiarity is further attested by the fact that in nearly the whole length of this vast region the same fruits are grown. Within a radius of fifty miles around Oroville, which is 150 miles north of San Francisco, and 650 miles north of Los Angeles, several hundred carloads of oranges are raised each year and shipped out of the State, and they ripen earlier than in the south. Elevation has much more to do with temperature than latitude, for in high altitudes we find snow. Our

mountain summer climate is extremely delightful and is destined to draw many Eastern people to the numerous charming retreats in the Sierra Nevada and the Coast Range.

Economic Value. But, after all is said, it must be conceded that climate is our greatest resource because of its high economic value, as it is also our most valuable asset.

The unthinking speak of climate as an attraction rather than a resource, but it is a resource because by its influence we are enabled to so marvelously diversify and increase the number of our agricultural products, and often, too, all these products may be grown on the same body of land. It is a resource, because man's labor here can be profitably employed every day in the year; because there is no month when vegetation in some form is not growing, and because it furnishes ideal conditions for the growth of irrigated crops. There is no time in California when all nature is at rest or plant life is sleeping. In the field, orchard, garden, factory, and in the mines; on the stock-farm and in the dairy, every day is a day of productive labor. We commence shipping fresh deciduous fruits in May and there is no cessation until December. In November we begin to ship citrus fruits, and they overlap the deciduous fruits and continue, in fact, the year through.

Professor E. W. Hilgard justly sums up the matter thus: "Taken as a whole California corresponds in its climatic features and adaptation to the Mediterranean region of Europe and Africa—a grand Riviera, with a partial background of the desert as well, where the date palm and the ostrich find a congenial home, and alluvial plains equaling in richness the famed delta of the Nile."

IRRIGATED AGRICULTURE—THE DOMINANT INDUSTRY OF CALIFORNIA.

By Samuel Fortier,

Chief of Irrigation Investigations, U. S. Department of Agriculture.

California has always been considered a State of great possibilities. Her mines and her commerce and her climate and agriculture have long been the theme of inspiring pen-pictures. With a range of climate and soil and of mountain and valley more varied than that possessed by any of her sister States, with a geographical position and commercial facilities naturally favorable to intensive development, she has ranked as the leader in the upbuilding of Western America. But while her gold and her seaports and her forests and commerce have made her position unique among the States, her future has always been considered bound up in her agriculture. Over half a century of development has shown that if this agriculture is to be the best of which the State is capable, it must be founded on irrigation, and for years the careful husbandman has, over a large portion of the State at least, made the artificial application of water to land an important part of his industry. Hence it is that any treatment of irrigation in California must consider not only what has been accomplished, but what seems possible of accomplishment in the future.

The total land area of California is approximately one hundred million acres. According to the irrigation census of 1909, 2,664,104 acres were actually irrigated in 1909. According to investigations made in 1911 and 1912 for the Department of Agriculture and the State Conservation Commission of California, the area in the State now watered is upward of 3,150,000 acres. These statements, however, do not convey a true idea of the relative importance of irrigation to agriculture in California. Quoting the source of information last cited, the total area of irrigable agricultural land found in the zones of irrigation water supplies, which includes all of the valley lands, the rolling plains of the Great Valley, the arable portions of the Sierra foothills up to about 3,000 feet in elevation, and all of the plateau and

desert lands to which some irrigation water supplies are available, is 21,866,000 acres. This estimate does not include the rolling and broken arable acres in the Coast Range Mountains, on some of which small local water supplies may sometime be used for irrigation. Of the total area suited to irrigation, agents of the Irrigation Investigations of the Department of Agriculture estimate that upward of 9,500,000 acres will ultimately be watered. Yet this is not the whole truth. In 1909 about one-fifth of all the irrigated land in the United States was in California, and this State ranked first in the total number of irrigated farms and in the total construction cost of systems. The highest priced irrigated land in America is found in California, and in no other State has water for irrigation reached so high a value, or been as carefully and as economically used. And in no other State is there so great an area of fertile farming land for which the available supply is so large.

Irrigation, like any other development, has followed the lines of most evident financial returns. Hence the localities of least annual and summer rainfall were the first to be reclaimed by the artificial use of water. The tide of irrigation, however, has been moving steadily northward, and excepting in the sections of excessive rainfall, the necessity for irrigation, or at least the value of it where it is not a complete necessity, is almost universally recognized. While heretofore, then, irrigation has followed the line of the most evident return, in the future it will follow the available water supply.

The water supply of the State is in its streams and wells. The wells now dug and in use are chiefly in Southern California and in the Sacramento, the lower San Joaquin and the Santa Clara Valleys. Only the larger streams of the State have been measured, and without reliable data it is impossible to estimate the flow in the hundreds of smaller streams.

The supply in the larger streams, as measured by the United States Geological Survey, is given in the following table. These figures give in round numbers the average annual flow in acre-feet for the past four to six years:

TOTAL MEAN ANNUAL FLOW OF CALIFORNIA STREAMS IN ACRE-FEET.

Name of Stream	Station	Acre-feet
San Joaquin River	Herndon ..	1,840,000
Tuolumne River	La Grange	2,130,000
Kings River	Sanger ..	2,138,000
Stanislaus River	Knight's Ferry	1,365,000
Merced River	Merced Falls	1,220,000
Kern River	Bakersfield ..	658,000
Kaweah River	Three Rivers	534,000
Tule River	Porterville ..	180,000
Salinas River	Salinas ..	200,000
American River	Fair Oaks (near)	3,610,000
Yuba River	Smartsville (near)	3,256,000
Feather River	Oroville ..	6,095,000
Cache Creek	Yolo ..	420,000
Stoney Creek	Fruto (near)	570,000
Sacramento River	Red Bluff (near)	10,175,000
Southern California streams		200,000
Colorado River at Yuma (one-half flow)		15,550,000
Total		41,866,000

Leaving out of consideration the water supply available in the creeks and smaller rivers, 42,000,000 acre-feet of water is sufficient to cover the 14,000,000 acres of agricultural land in California to depth of over 36 inches, which is ample for the growth of all crops. This vast quantity of water can never be entirely utilized in irrigation, because it cannot be fully controlled, but the statement of it shows the tremendous potentialities of California irrigated agriculture.

CLIMATOLOGICAL DATA FOR 1913.
Table from the Annual Summary, California Bureau Record, 1913.

Stations	Counties	Eleva- tion, feet	Temperature Degrees Fahrenheit		Precipitation inches		Rainy days	Sky		Part of country
			Annual Mean	High- est	Low- est	Total for year inches	Total snowfall inches	Clear days	Partly cloudy days	Cloudy days
Independence	Inyo	3907	54.5	103	-4	7.36	0.8	133	123	49
Hornbrook	Siskiyou	2154	46.8	97	-1	16.27	44.0	184	88	123
Alturas	Modoc	4460	45.8	98	-21	16.77	79.0	178	111	76
Dunsmuir	Siskiyou	2286	52.7	103	17	50.58	120.0	230	0	135
Quincy	Plumas	3400	48.0	97	-17	33.14	112.0	217	43	75
Summit	Placer	7017	41.0	80	-4	43.45	245.1	172	13	179
Tamarack	Alpine	8000	36.7	80	-20	50.73	407.0	156	116	93
Yosemite	Mariposa	3945	48.9	103	-2	32.00	123.7	232	39	104
Redding	Shasta	5052	62.6	112	18	36.96	26.5	132	140	43
Red Bluff	Tehama	307	62.6	110	25	25.77	8.0	213	61	81
Orland	Glenn	254	62.9	113	25	20.97	T	233	72	60
Colusa	Colusa	60	61.2	107	23	17.72	2.4	266	37	53
Sacramento	Sacramento	71	60.4	109	26	14.29	0.1	254	56	58
Stockton	San Joaquin	23	60.1	108	21	11.22	T	219	64	52
Merced	Merced	173	62.3	110	18	10.31	0	228	60	57
Fresno	Fresno	293	63.4	109	17	8.69	T	206	102	87
Bakersfield (B. R.)	Kern	404	65.2	116	14	...	...	...	...	...
Oroville (near)	Butte	250	61.7	110	15	31.78	6.0	203	48	114
Nevada City	Nevada	2580	53.6	102	4	46.22	59.0	212	84	69
Rocklin	Placer	2949	60.6	111	20	18.00	3.0	245	17	103
Placerville (B. R.)	El Dorado	1875	55.1	107	10	28.32	4.0	...	...	...
Jamestown	Tuolumne	1471	57.3	107	12	23.68	T	233	5	77
Lemon Cove	Tulare	600	65.4	112	18	13.86	1.0	135	124	56
Reedley (B. R.)	Fresno	347	...	108	17	...	...	...	...	...
Caliente (B. R.)	Kern	1290	61.6	109	19	...	...	...	...	...
Eureka	Humboldt	64	51.1	78	28	33.80	0.5	128	13	17
Point Reyes	Marin	490	52.6	91	33	16.74	0	113	128	124
San Francisco	San Francisco	207	56.4	101	33	19.05	T	134	78	153
Monterey	Monterey	15	58.8	94	24	13.90	0	194	93	78
San Francisco	San Francisco	130	58.2	108	27	18.56	0	216	51	24
San Diego	San Diego	93	60.7	110	25	17.80	0	219	72	64
Los Angeles	Los Angeles	293	62.5	108	28	17.17	T	219	105	41
Riverside	Riverside	851	63.3	111	21	9.00	T	193	132	74
Escondido	San Diego	657	60.6	110	13	12.22	0	40	193	21
Redlands	San Bernardino	1352	61.3	105	18	10.27	3.0	76	271	18
San Jose	Sonoma	181	56.3	112	25	31.38	10.4	215	67	83
Mt. Tamalpais	Marin	2375	51.5	97	22	23.34	...	161	55	119
Lick Observatory (B. R.)	Santa Clara	4209	51.1	91	11	23.46	...	216	73	76
San Jose	Santa Clara	95	58.0	103	25	12.00	...	225	57	83
Hollister	San Benito	284	57.2	106	18	12.41	0	215	89	76
Los Gatos	Santa Clara	600	58.8	107	25	23.05	0	211	86	68
Paso Robles	San Luis Obispo	800	58.1	112	0	19.71	0	237	44	84
Ojai Valley	Ventura	900	60.5	113	13	24.19	0	259	71	35
Palm Springs	Riverside	584	70.1	114	18	3.88	T	283	74	38
Calexico	Imperial	0	69.9	113	18	1.88	0	282	56	28
Mecca	Riverside	185	70.1	114	13	0.84	0	327	20	18
								249	107	9

B. R.—Broken record.

T.—Indicates trace of precipitation.

Using the figures of the census of 1909 as a basis, the total cost of irrigation systems in California has been \$72,445,669, or \$20.02 per acre. From 1902 to 1909 the increase in the irrigated area averaged about 135,000 acres per year.

From the returns made by assessors and the shipments of products out of the State it is possible to form an approximate estimate of the value of a part of the irrigated product. Of the 300,000 acres in vines and an equal area in orchards, the annual gross returns to the growers would not vary far from \$150 per acre, or \$90,000,000 in all. Then, in addition, there is alfalfa, vegetables, small fruits and other crops, the greater part of which are irrigated. The gross returns from these would increase the annual value to the extent of \$45,000,000.

It has already been stated that irrigation was first resorted to in California in those sections where a profit from irrigation was first most evident. These sections have, of course, been where the rainfall is least. In that portion of the State south of Tehachapi, commonly known as Southern California, the development of irrigation was rapid, continuing with bounds until the water supply available in the streams was practically exhausted. Since then the irrigated area has been extended only by resort to pumping from wells and by endeavoring to make the water already diverted irrigate two acres where it irrigated only one acre before. The total area included within projects in various parts of the State in 1909 was 5,490,360 acres, of which about 70 per cent was actually irrigated in 1909. Outside of Southern California, the principal areas irrigated from wells and springs were located in the San Joaquin and Sacramento Valleys and in the Santa Clara Valley.

The foregoing is a brief statement of what has been accomplished by private enterprise during less than half a century in reclaiming a portion of the irrigable lands in California. The attention of the reader has likewise been called to the natural resources in both land and water which remain undeveloped, awaiting the concerted action of industrious farmers. Notwithstanding the magnitude of this task, we believe that it can be accomplished. The same intelligence, energy and perseverance which wrested over 3,000,000 acres from barren sands and low-producing grain fields can reclaim other millions of acres.

Of late years large sums of money have been expended on both the northern and southern borders of California by the United States Reclamation Service in the construction of irrigation works. These will materially increase the revenues obtained from irrigated farms and orchards.

On the southern boundary of the State, over 16,000 acres of the Yuma Project are in Imperial County, California. This, with about 14,000 acres included in the Orland Project, makes a total of 30,000 acres under these projects. In addition, an area, whose exact acreage is not yet certain, will be watered in California by the Klamath Project, in Modoc and Siskiyou Counties.

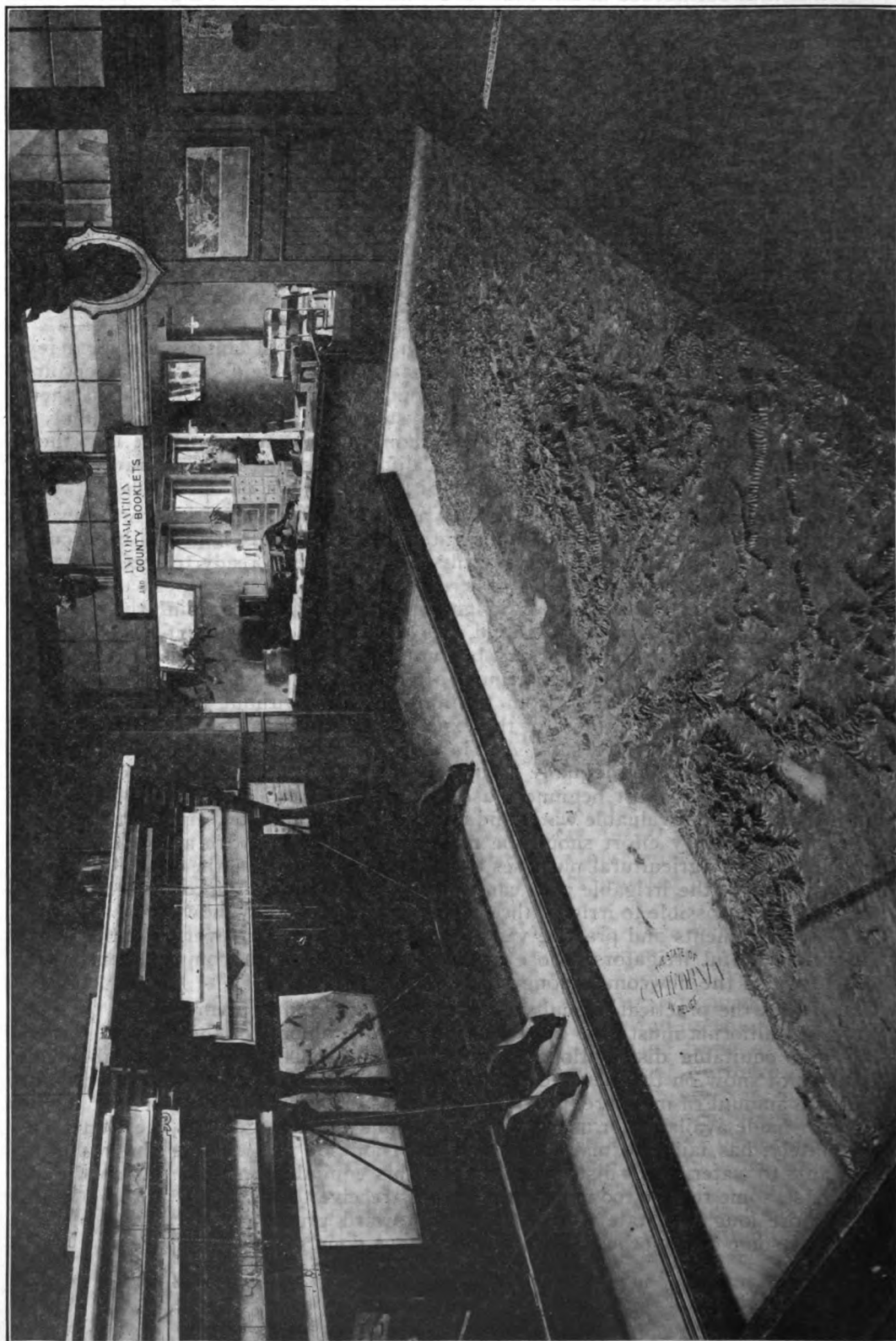
The areas thus far developed may be divided into three general groups depending upon their geographical location. The first comprises the territory south of Tehachapi Pass which is dependent on small rivers, mountain streams, flowing wells and pumping plants for its supply of water for irrigation purposes. The second area includes that covered by the San Joaquin River and its tributaries known as the San Joaquin Valley. The third area is the drainage basin of the Sacramento River and its tributaries covering central and interior Northern California. A partial description of irrigation in the Sacramento Valley is given in Bulletin 207 of the Office of Experiment Stations, U. S. Department of Agriculture, and similar reports on the San Joaquin Valley and Southern California have been prepared by the same office. In 1912 an irrigation map of the State was published at the joint expense of the Department of Agriculture and the Conservation Commission. In addition reports prepared in the Irrigation Investigations of the Department of Agriculture and printed in the 1912 report of the State Conservation Commission and in Bulletin 254 of the Office of Experiment Stations of the Department of Agriculture, outline irrigation conditions and possibilities in every section of the State.

What is most needed in this State and what we should most highly prize is an influx of industrious settlers, each possessing sufficient means to enable him to make a fair start along the line of irrigated agriculture. The opportunities open to this class are exceptionally good. All of the natural advantages essential to the success of the irrigated farm are to be found in the great central valley of California—fertile soil, good climate and an abundant water supply. Yet these natural gifts count for little when not utilized. We need the intelligent brain and the trained hand of thousands of farmers to make the best possible use of these advantages. In much of this work no large amount of capital is required. In this connection it may be a surprise to some to learn that there are about 1,870,000 acres of rich valley land now included in California irrigation projects but not irrigated. Much of this land is for sale at reasonable prices. The water supply for a much larger area is readily accessible, and both land and water can be united under the most favorable circumstances whenever a sufficient number of citizens join to bring it about.

This dominant industry of California is in no danger of languishing for a few years to come on account of the lack of irrigation canals and storage reservoirs. The State is now filling up at the rate of about 100,000 people a year, and there is sufficient unirrigated land under canal systems to provide for this influx of settlers for the next ten years. The settlers should understand, however, that there are difficulties in the way of irrigation in California, as there are wherever irrigation is practiced. A brief review of some of these may not be out of place.

It has been stated that about 1,870,000 acres of fertile valley land are now included in irrigation projects but unirrigated. Much of this land has been cultivated for years, but it does not necessarily follow that it is ready to receive water. It may cost on an average of \$15 per acre or more to construct permanent farm ditches to prepare the surface for irrigation. Information regarding the methods of irrigation, cost of preparing the land, size and grade of farm ditches, etc., are available in a number of publications, but notably in Farmers' Bulletins 263, 373, 392, 399 and 404 of the U. S. Department of Agriculture. If the task of preparing land is attempted by settlers from the humid states without their first making every effort to avail themselves of the experience of older irrigators, partial failure, at least, will be very apt to result. And in addition to the perplexities of preparing land for irrigation, others equally trying are quite sure to be encountered in applying water to land. Most beginners use too much water. The evils of this, including the waste of valuable water and injury to crops and soil, are apt to be considerable, and every effort should be made to see that they are avoided. As the land adapted to agricultural purposes becomes settled and as the available water is appropriated, the irrigable area can only be increased by improved methods of use, making it possible to irrigate three acres with the supply now being used on two. Requirements and practice vary with localities, but in every locality there are some careful irrigators whose advice, well mixed with common sense, will help to guide the newcomer along a safe path.

Besides the practical difficulty of preparing land and applying water, the irrigator in California must give careful attention to problems of the rightful ownership and equitable distribution of water. Nature usually provides an abundant quantity of snow on the elevated ranges to supply the soil of the valleys with the requisite amount of moisture, provided that it is properly husbanded and distributed or made available for use at the proper time by storage; but the State, unfortunately, has failed to make adequate provision for determining the rights of claimants to water, or for distributing to each his equitable portion. As conditions now exist, some receive too much, while others receive too little. It is to be hoped that before long the State will do as much toward protecting the rights of irrigators as some of the other Western States have done.



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Mendocino	P. I. Lancaster, Willits
Merced	
Modoc	
Monterey	
Napa	Jas. H. Devine, Sacramento
Sacramento	
San Benito	Edgar Grossman (San Francisco)
San Diego	A. H. Wright, Stockton
San Joaquin	
San Mateo	
Santa Clara	Jos. T. Brooks, San Jose
Shasta	W. Coyne, Redding
Solano	Thos. Smith, Vallejo
Sonoma	Thomas Maclay, Petaluma
Stanislaus	Geo. T. McCabe, Modesto
Sutter	B. F. Walton (Sacramento)
Tehama	N. P. Chipman (Sacramento)
Tulare	Arthur E. Miot, Visalia
Yolo	T. B. Gibson, Woodland
Yuba	A. L. McDonald (San Francisco)
North of Bay Counties Association	Robert Newton Lynch (San Francisco)

INDIVIDUALS, FIRMS AND CORPORATIONS

Representatives

Anglo & London Paris National Bank	C. F. Hunt, Sansome and Sutter Streets
Bank of California, National Association	Chas. K. McIntosh, California and Sansome Streets
Brewers' Protective Association	J. A. Hieronimus
	Care Union Brewing & Malting Co., 18th and Florida Streets
Brown, Walker, Simmons Co.	Frank L. Brown, Crocker Building
California Barrel Company	Frederick J. Koster, 22nd and Illinois Streets
California Door Company	E. H. Kittredge, 43 Main Street
California Pine Box and Lumber Company	G. X. Wendling, Flood Building

HONORARY MEMBERS

Crocker National Bank	J. B. McCargar, Crocker Building
Emporium, The	Wm. Kaufmann, Market near Fourth Street
Fireman's Fund Insurance Company	Wm. J. Dutton, Insurance Exchange Building
First National Bank of San Francisco	C. H. McCormick, Montgomery and Post Streets
Fuller, W. P., & Company	Frank W. Fuller, 301 Mission Street
German Savings & Loan Society	Geo. Tourny, 526 California Street
Gunst, M. A., & Company	Milton Esberg, California and Front Streets
Hale Brothers, Inc.	R. B. Hale, Market and Fifth Streets
Halsey, N. W., & Company	Cyrus Pierce, 424 California Street
Hibernia Savings & Loan Society, The	R. M. Tobin, Jones and McAllister Streets
Hotel St. Francis	James Woods, Geary and Powell Streets
Mercantile National Bank of San Francisco	W. F. Berry, 424 California Street
Metson, Wm. H.	Milton Bernard, 501 Balboa Building
Miller & Lux, Inc.	Merchants Exchange Building
Nathan-Dohrmann Company	A. B. C. Dohrmann, Geary and Stockton Streets
Pacific Gas & Electric Company	L. F. Walsh, 445 Sutter Street
Pacific Hardware & Steel Company	A. L. Scott, 7th and Townsend Streets
Rollins, E. H., & Sons	D. H. Dibblee, First National Bank Building
Savings Union Bank & Trust Company ..	John S. Drum, Grant Avenue and O'Farrell Street
Sloss Brothers ..	Alaska Commercial Building
Standard Oil Company	W. S. Rheem, 461 Market Street
Tillman & Bendel	Carl H. Schmidt, Pine and Davis Streets
United Railroads	Wells Fargo Building
Wells Fargo Nevada National Bank	Col. John P. Irish (Oakland)
Tarpey, M. F.	Tarpey, Fresno County, California
Rowell, Chester	Fresno
Irvine, James	Crocker Building
Requa, Mark L.	Crocker Building
Fleishhacker, Mortimer.	Care Anglo-California Trust Company, Market and Sansome Streets

HONORARY MEMBERS

Hiram W. Johnson	Governor of California
A. L. Scott	President State Board of Agriculture, Sacramento
David Starr Jordan	Pres. Leland Stanford, Jr., University, Palo Alto
Benjamin Ide Wheeler	President University of California, Berkeley
Luther Burbank	Santa Rosa
A. J. Cook	State Horticulturist, Sacramento
Judge N. P. Chipman	Sacramento
Col. John P. Irish	Oakland
E. W. Maslin	San Francisco
F. McN. Hamilton	State Mineralogist, San Francisco
J. A. Filcher	Sacramento
J. N. Gillett (former President California Development Board)	Berkeley

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THE UNIVERSITY OF

CHICAGO

LIBRARY

The Panama-California Exposition

SAN DIEGO

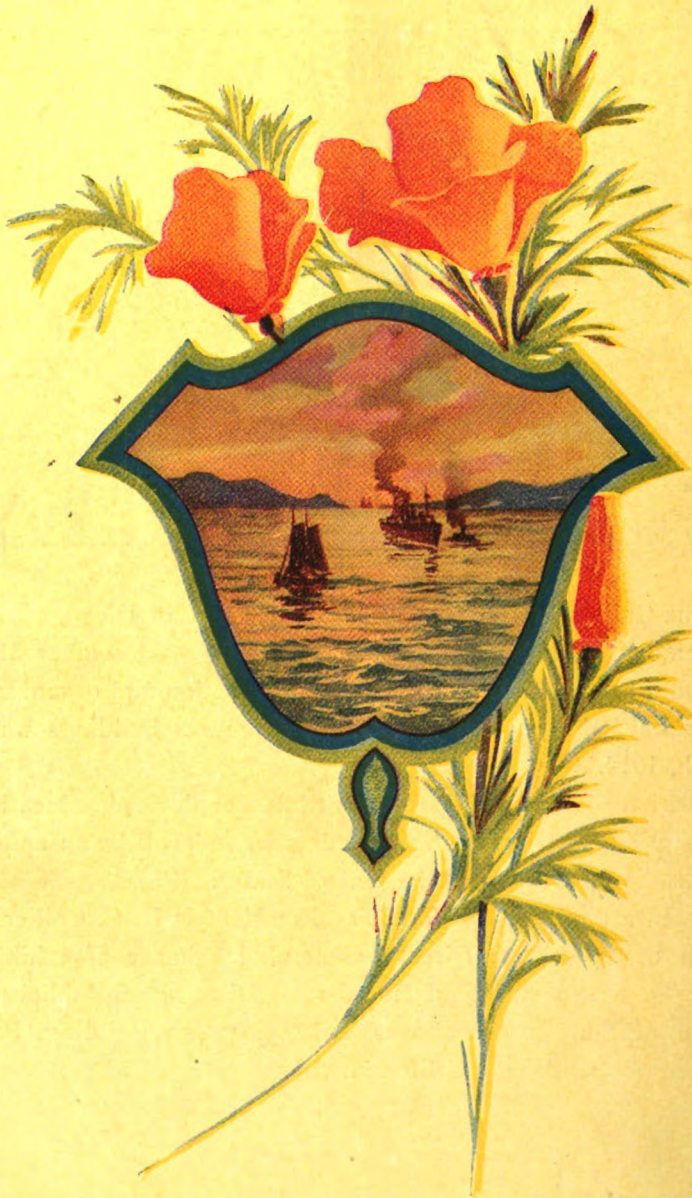


The Panama-California Exposition, to be held at San Diego, opening at midnight, December 31, 1914, and closing at midnight, December 31, 1915, was organized and has proceeded steadily to construction and organization in all departments until the physical construction of main buildings was completed in March, 1914.

This Exposition will be the most beautiful ever devised, educational, a wonderful mission city set in a tropical landscape, and will be an epitome of the Great Southwestern Empire of the United States.

The estimated attendance is 8,000,000. President is D. C. Collier; Vice-President, John D. Spreckels; Director-General, in charge of exhibits and concessions, H. O. Davis; Winfield Hogaboom, Director of Publicity. Address all communications to the above. Administration Building, Panama-California Exposition, San Diego, California.





California

RESOURCES AND POSSIBILITIES



CALIFORNIA
DEVELOPMENT BOARD

SAN FRANCISCO
CALIFORNIA 1914

THE CALIFORNIA DEVELOPMENT BOARD

A Consolidation of
THE CALIFORNIA STATE BOARD OF TRADE
THE MANUFACTURERS AND PRODUCERS ASSOCIATION OF CALIFORNIA
THE CALIFORNIA PROMOTION COMMITTEE
Ferry Building, San Francisco

OFFICERS

Wm. J. Dutton.....	President
A. B. C. Dohrmann.....	Vice-President
Robert Newton Lynch.....	Vice-President and Manager
Edgar Allen Forbes.....	Secretary
Wells Fargo Nevada National Bank.....	Depository

EXECUTIVE COMMITTEE

N. P. Chipman
Robert Newton Lynch
James Irvine
B. F. Walton
John P. Irish

Wm. J. Dutton
R. B. Hale
A. B. C. Dohrmann
Frederick J. Koster
Chester H. Rowell

Mortimer Fleishhacker
Thomas MacLay
James B. Bullitt
Thos. Forsyth Hunt
P. I. Lancaster

ACTIVE MEMBERS

(1) COUNTY MEMBERSHIPS

The following counties are members of the California Development Board and a representative from each is designated as its representative: Alameda, Butte, Colusa, Contra, Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kern, Kings, Lassen, Los Angeles, Madera, Marin, Mendocino, Merced, Modoc, Monterey, Napa, Riverside, Sacramento, San Benito, San Diego, San Joaquin, San Mateo, Santa Clara, Shasta, Solano, Sonoma, Stanislaus, Sutter, Tehama, Tulare, Yolo, Yuba, North of Bay Counties Association.

(2) INDIVIDUALS, FIRMS AND CORPORATIONS

Anglo & London Paris National Bank.....	C. F. Hunt, Sansome and Sutter Streets
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Prof. Thos. F. Hunt.....	University of California, Berkeley
Rowell, Chester H.....	Fresno
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A. J. Cook.....	State Horticulturist, Sacramento
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Col. John P. Irish.....	Oakland
E. W. Maslin.....	San Francisco
F. McN. Hamilton.....	State Mineralogist, San Francisco
J. A. Filcher.....	Sacramento
J. N. Gillett (former President California Development Board).....	525 Market Street, San Francisco

CALIFORNIA

RESOURCES AND POSSIBILITIES

TWENTY-FIFTH ANNUAL REPORT

OF THE

California Development Board

FOR THE YEAR 1914

Submitted as of June, 1915

CALIFORNIA DEVELOPMENT BOARD

OFFICE AND EXHIBITION HALL

Ferry Building, San Francisco

UPPER FLOOR

The Board.



EXHIBIT HALL CALIFORNIA DEVELOPMENT BOARD, FERRY BUILDING, SAN FRANCISCO
ONE OF THE MAIN AISLES



TWENTY-FIFTH ANNUAL REPORT OF THE CALIFORNIA DEVELOPMENT BOARD

To the Members of the Board:

I have the honor to present herewith the twenty-fifth annual Statistical Report of the California Development Board. This report is the most complete up-to-date record of the progress and production of the State of California which is published, and is the result of painstaking work. If in some respects it may be found lacking in completeness or accuracy, that is only because it has seemed impossible in some cases to get reliable data. Since this report is published in a very large edition for distribution all over the world, the following statement is made as to the character and activities of the Board:

The California Development Board is directed by an Executive Committee composed of fifteen gentlemen active in the public and commercial life of California. Its membership is made up of official representatives appointed by the Boards of Supervisors of thirty-seven counties of the State, together with a representative from each active membership in the Board. Active members consist of persons and firms subscribing \$15 or more per month to our work. Helpful affiliation is sustained with all of the commercial organizations of the State and the Board co-operates closely with the Agricultural Department of the State University and with other official and public agencies. Most of the correspondence from intending settlers received at the Governor's office, the State Department, the Commission of Immigration and Housing and other official bureaus is turned over to us for reply.

The Board furnishes speakers and experienced advice to commercial organizations desiring assistance in their work and seeks to raise the efficiency of all voluntary organizations for commercial and agricultural development. A formal meeting of representatives of all the counties of the State is held at least once each year, at which State-wide problems are discussed. This brief sketch of our work is presented for the information of homeseekers, investors and inquirers to whose hand this statistical report may come.

Correspondence is solicited from all who are interested in California or who desire to locate commercial, manufacturing or agricultural enterprises. All inquiries will be answered impartially and the fullest information obtainable will be gladly furnished. The Board has nothing to sell and does not represent any real estate or commercial enterprise. Its sole object in answering inquiries is to give such information as will enable homeseekers and investors to secure a thorough knowledge of the conditions in the localities in which they are interested.

Some Board Activities of the Year

Our Information Bureau at the Ferry Building has been conducted with efficiency. The average daily attendance at the desk has been about 350. At least half of these applicants asked merely for county literature, but a great many required specific information and personal attention. From two to four members of the staff have been constantly on duty throughout the year.

The large amount of agricultural clippings and manuscript data on file in our reference library has been classified during the year according to the Dewey decimal system, which makes it instantly available. Additional county maps have been added and our stock of county literature greatly increased. The agricultural surveys made by our own field men have been of immense service to this department. Complete surveys of thirteen counties are now available and the information has been properly classified. The United States soil surveys and topographical maps have also reinforced this accurate stock of information. Inquiry letters from all parts of the world have been handled daily and those who were prospective settlers have been referred to the commercial secretaries in the counties about which they made inquiry. Our postage expense for the year was \$1645.

Thirty-five counties of the State maintained exhibits in the Ferry Building during the year and Del Norte and Riverside recently came into the membership. All of the exhibits have been overhauled and the lighting system improved. As an advertising feature, a war bulletin was maintained in the nave of the Ferry Building for a time, with an attendant in charge. It attracted from 8,000 to 10,000 a day, many of whom were drawn upstairs to the exhibits and lectures.

The field work of the Board during 1914 was done in Santa Barbara, Nevada, Mendocino, Sonoma and Santa Clara Counties. The field staff was abolished in February but it is expected that the Board will resume this important work on a larger scale soon.

The special publications issued during the year are as follows:

	Copies
(1) Annual Report; California Resources and Possibilities.....	20,000
(2) Hogs in California.....	2,000
(3) Dairying in California.....	2,000
(4) Government Lands Newly Opened in California.....	2,000
(5) Soils of California.....	2,000
(6) Proceedings of the Counties Convention at Santa Rosa.....	2,000
(7) Olives in California (reprint).....	2,000
(8) Monthly Bulletin.....	275,000
(9) Geographical, Topographical, State Highway and Railroad Map of California has been entirely revised and 50,000 copies printed for distribution.	

Our lecture bureau was maintained continuously throughout the year, with lectures on the State of California, ten Sacramento Valley Counties, San Diego and Stanislaus Counties. During the year a motion-picture machine was installed and special films showing California industries have been run twice a day, in addition to the regular lectures.

Aside from its other services to the Expositions, the California Development Board was invited by the Panama-Pacific International Exposition to take charge of the Official Bureau of Information in the center of the California Building. This service was promptly installed, is under efficient supervision and is co-operating cordially with the county representatives on the floor.

The finances of the Board are in good condition and there are no outstanding debts.

The annual statistical report, covering the calendar year 1914, follows.

Respectfully submitted,

ROBERT NEWTON LYNCH,

Vice-President and Manager.

EDGAR ALLEN FORBES, *Secretary.*

ANNUAL STATISTICAL REPORT

Growth in Population and Development of California Since It Became a State

(U. S. Census Returns.)

Year	Population of State	Number of farms	Average acres per farm	Ave. value of land and buildings per acre
1850	92,597	878	4,465.6	0.99
1860	379,994	18,716	466.4	5.58
1870	560,247	23,724	481.7	12.36
1880	864,694	35,934	461.8	15.79
1890	1,208,130	52,814	405.	32.53
1900	1,485,052	72,542	397.4	24.56
1910	2,377,549	88,197	316.7	51.93

Irrigation

Of the 88,197 farms in the State, 39,352 (46.6 per cent) were irrigated in 1909. The area reported as irrigated in 1909 was 2,664,104 acres, or 23.4 per cent of the improved land in farms. The area to which enterprises existing in 1910 were capable of supplying water was 3,619,378 acres, and the total acreage included in irrigation projects (completed or under way) in 1910 was 5,490,360 acres.

Population, Number of Farms and Farm Acreage

Census year	Population	Farms		Land in farms		Per cent of land area in farms	Per cent of farm land improved
		Number	Per cent of increase	Acres	Improved land (acres)		
1910.....	2,377,549	88,197	21.6	27,931,444	11,389,894	28.0	40.8
1900.....	1,485,053	72,542	37.1	28,828,951	11,958,837	28.9	41.5
1890.....	1,213,398	52,894	47.2	21,427,293	12,222,839	21.5	57.0
1880.....	864,694	35,934	51.5	16,593,742	10,669,698	16.7	64.3
1870.....	560,247	23,724	26.8	11,427,105	6,218,133	11.5	54.4
1860.....	379,994	18,716	2,046.3	8,730,034	2,468,034	8.8	28.3
1850.....	92,597	872	.....	3,893,985	32,454	3.9	0.8

Farm Operations in 1910

Color and nativity	Total		Owners	Tenants	Man-agers	Per cent of total		
	Number	Per cent distribution				Owners	Tenants	Man-agers
Native white	58,926	66.8	45,780	10,505	2,641	77.7	17.8	4.5
Foreign-born white	26,193	29.7	19,914	5,565	714	76.0	21.2	2.7
Negro and other non-white.....	3,078	3.5	938	2,078	62	30.5	67.5	2.0
Total.....	88,197	100.0	66,632	18,148	3,417	75.5	20.6	3.9

Density of Population

In 1900, twenty States ranked ahead of California in population. In 1910, only eleven had that honor. In the ten-year period the Golden State had outstripped nine of them, taking twelfth place.

The density of the population is still but 15.2 persons to the square mile.

Population of California Counties

The estimates for 1914 are all official estimates. The initials in the last column show the authority for each: C of C=Chamber of Commerce; B of S=Board of Supervisors; Co. Cl=County Clerk. Repeated efforts to secure even an estimate from all of the counties have been unavailing, though many officials were appealed to in each county. The official figures for 1910 are used in the case of each delinquent county.

Population of California Counties

Counties	Land Area in Square Miles, 1910	Population 1910 U. S. Census	Per Cent of Increase 1900-10	Population Dec. 31, 1914 (Estimated)	Authority
Alameda	732	246,131	89.0	359,000	C of C
Alpine	776	309	—39.3	309	1910
Amador	601	9,086	—18.3	11,000	Co Cl
Butte	1,722	27,301	59.5	31,000	C of C
Calaveras	1,027	9,171	—18.1	9,171	1910
Colusa	1,140	7,732	5.0	7,882	C of C
Contra Costa	714	31,674	75.5	52,500	C of C
Del Norte	1,024	2,417	0.4	2,417	1910
El Dorado	1,753	7,492	—16.6	8,000	Co Cl
Fresno	5,950	75,657	99.8	120,000	B of S
Glenn	1,259	7,172	39.3	7,172	1910
Humboldt	3,634	33,857	24.9	37,500	C of C
Imperial	4,089	13,591	....	50,000	C of C
Inyo	10,019	6,974	59.3	7,500	B of S
Kern	8,003	37,715	128.9	50,000	B of S
Kings	1,159	16,230	64.4	23,500	C of C
Lake	1,278	5,526	—8.2	5,600	C of C
Lassen	4,531	4,802	6.5	7,000	Co Cl
Los Angeles	4,067	504,131	196.0	815,000	C of C
Madera	2,112	8,368	31.5	12,000	C of C
Marin	529	25,114	59.9	28,400	C of C
Mariposa	1,463	3,956	—16.2	3,956	1910
Mendocino	3,453	23,929	16.9	27,000	C of C
Merced	1,995	15,148	64.4	20,000	C of C
Modoc	3,823	6,191	22.0	6,191	1910
Mono	3,030	2,042	5.8	2,100	Co Cl
Monterey	3,330	24,146	24.6	25,250	C of C
Napa	783	19,800	20.4	26,500	C of C
Nevada	974	14,955	—15.9	15,500	C of C
Orange	795	34,436	74.8	56,500	C of C
Placer	1,395	18,237	15.5	18,237	1910
Plumas	2,594	5,259	12.9	5,259	1910
Riverside	7,240	34,696	93.9	45,000	Co Cl
Sacramento	983	67,806	47.7	67,806	1910
San Benito	1,392	8,041	21.2	8,750	Co Cl
San Bernardino	20,157	56,706	103.0	53,000	B of S
San Diego	4,221	61,665	75.7	125,379	Co Cl
San Francisco	43	416,912	21.6	528,705	C of C
San Joaquin	1,448	50,731	43.1	70,000	C of C
San Luis Obispo	3,334	19,383	16.5	25,000	C of C
San Mateo	447	26,585	119.8	35,000	C of C
Santa Barbara	2,740	27,738	46.5	32,750	C of C
Santa Clara	1,328	83,539	38.7	90,000	B of S
Santa Cruz	435	26,140	21.5	30,140	C of C
Shasta	3,858	18,920	9.3	19,000	Co Cl
Sierra	923	4,098	2.0	4,098	1910
Siskiyou	6,256	18,800	10.8	25,000	Co Cl
Solano	822	27,559	14.1	31,000	C of C
Sonoma	1,577	48,394	25.8	48,394	1910
Stanislaus	1,450	22,522	135.8	30,000	C of C
Sutter	608	6,328	7.5	9,375	Co Cl
Tehama	2,893	11,401	3.7	14,575	Co Cl
Trinity	3,166	3,301	—24.7	3,250	Co Cl
Tulare	4,856	35,440	92.9	34,500	C of C
Tuolumne	2,190	9,979	—10.6	9,979	1910
Ventura	1,878	18,347	27.7	21,000	C of C
Yolo	1,014	13,926	2.3	15,000	Co Cl
Yuba	639	10,042	16.5	14,750	Co Cl
California	155,652	2,377,549	60.1	3,242,895	

Since the estimate of the State Statistician for July 1, 1914, is only 2,757,895, it is probable that some of these 1914 estimates are mere guesses, on the optimistic side.

Principal Cities of California

This table gives the population of cities in California having over 5,000 inhabitants in 1910, according to the U. S. Census, with comparisons for 1900:

Cities	Population 1900	Population 1910
	U. S. Census	U. S. Census
Alameda	16,464	23,383
Alhambra . . . . .	.....	5,021
Bakersfield	4,836	12,727
Berkeley	13,214	40,434
Eureka	7,327	11,845
Fresno	12,470	24,892
Long Beach	2,252	17,809
Los Angeles	102,479	319,198
Marysville	3,497	5,430
Napa	4,036	5,791
Oakland	66,960	150,174
Pasadena	9,117	30,291
Petaluma	3,871	5,880
Pomona	5,526	10,207
Redlands	4,797	10,449
Richmond . . . . .	.....	6,802
Riverside	7,973	15,212
Sacramento	29,282	44,696
San Bernardino	6,150	12,779
San Diego	17,770	39,578
San Francisco	342,782	416,912
San Jose	21,500	28,946
San Luis Obispo	3,021	5,157
San Rafael	3,789	5,934
Santa Ana	4,933	8,429
Santa Barbara	6,587	11,659
Santa Cruz	5,659	11,146
Santa Monica	3,057	7,847
Santa Rosa	6,673	7,817
Stockton	17,506	23,253
Vallejo	7,965	11,340
Total for above cities	739,513	1,314,037

Since 1910 the following cities have grown into the 5,000 class, according to the estimates of their respective commercial organizations:

Corona, East San Diego, El Centro, Grass Valley, Imperial City, Modesto, Monterey, Ontario, Palo Alto, Porterville, Visalia, Woodland.

Summary of the State

	Population		Increase Per Cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Bay counties	925,708	658,156	40.6	7,108	130.2	37.6
South of Tehachapi	751,310	304,209	146.9	45,102	16.6	9.9
Sacramento Valley	153,708	114,656	34.6	10,280	14.9	3.8
San Joaquin Valley	261,811	143,179	80.2	27,176	9.7	4.4
Rest of the State	285,012	264,853	7.6	66,506	4.2	.4
	2,377,549	1,458,053	60.1	156,172	15.2	5.7

This segregation shows that the greatest gain per square mile has been in the counties about San Francisco Bay, while the greatest aggregate gain and the greatest rate of increase has been south of the Tehachapi.

Of the two great interior valleys, the San Joaquin Valley has made the greatest aggregate gain, 118,632, and the greatest gain per cent, 80.2; while the Sacramento Valley made an aggregate gain of 39,042, and a gain per cent of 34.6.

The remaining counties of the State, twenty-five in number, show an aggregate gain of 20,159, and a net gain of 7.6 per cent.

Urban and City Population

Class of places	Population		Increase 1900 to 1910	
	1910	1900	Number	Per cent
The State	2,377,549	1,485,053	892,496	60.1
Urban territory	1,469,739	810,193	659,546	81.4
Cities and towns of—				
100,000 inhabitants or more	886,284	514,008	372,276	72.4
25,000 to 100,000 inhabitants	183,945	90,813	93,132	102.6
2,500 to 25,000 inhabitants	399,510	205,372	194,138	94.5
Remainder of the State	907,810	675,860	232,950	34.5

THE GAIN ON THE PACIFIC SLOPE

While the gain in population for the whole of the Continental United States, as shown by the Census of 1910, was 15,977,691, an increase of 21 per cent, the eleven States of the Pacific Slope, as given in the table below, show an aggregate increase of 2,734,567, an increase of 66.8 per cent.

The combined area is 1,175,742 square miles, which makes an average population per square mile of 5.8 persons, while the average population per square mile for the Continental United States is 30.9 persons.

Pacific Slope States

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Montana	376,053	243,329	54.5	145,310	2.6	.9
Wyoming	145,965	92,531	56.8	97,575	1.5	.6
Colorado	799,024	539,700	48	103,645	7.5	2.3
New Mexico	327,396	195,300	67.6	122,460	2.7	1.1
Arizona	204,354	122,931	66.2	112,920	1.8	.7
Utah	373,351	276,749	34.9	82,190	4.5	1.1
Nevada	81,875	42,335	93.4	109,740	.8	.4
Idaho	325,594	161,772	101.3	84,290	3.9	2.
Washington	1,141,990	518,103	120.4	66,880	17.	9.8
Oregon	672,765	413,536	62.7	94,560	7.1	2.7
California	2,377,549	1,485,053	60.1	156,172	15.2	2.7
Total	6,825,916	4,091,349	66.8	1,175,742	5.8	2.4

THE DEVELOPMENT OF AGRICULTURE IN CALIFORNIA

The remarkable growth of the State is shown by the following tables, giving the acreage of the most important crops in 1862, in 1910 and in 1914.

	1862 Agr. report acres	1910 Census report acres	1914 State Board of Equalization
Indian corn	17,339	51,935	89,144
Wheat	361,351	478,637	725,214
Rye	1,415	7,027	24,320
Oats	36,607	192,158	315,975
Barley	223,217	1,195,158	1,941,566
Potatoes	3,624	72,799	66,470
Hay and forage	250,464	2,049,213	2,533,347*
Total	894,017	4,046,927	5,696,036

(*1913 report of State Statistician. For 1914 the official reports give 951,833 acres of hay and 763,538 acres of standing alfalfa. Other acreages not given.)

To these figures should be added the following acreages not mentioned in the 1862 report.

	1910	1914
Hops	8,391	13,350
Celery	5,600	3,660
Beans	157,825	186,245
Standing alfalfa	487,134	763,538
Cotton	15,000	41,810
Sugar beets	101,000	94,898
Kaffir corn, etc.	50,194	44,308

Totals..... 825,144 1,147,809

(The last item included mustard seed, etc., in 1910, while the figures for 1914 refer only to kaffir corn and milo maize.)

Besides this increase in acreage of the staple crops, California had, according to the reports of the State Board of Equalization, vines and fruit trees as follows, bearing and not bearing, in 1910 and in 1914.

Vineyards

	1910 Acres	1914 Acres
Table grapes	53,729	71,017
Raisin grapes	128,217	120,792
Wine grapes	160,573	194,800
	342,519	286,509

Orchards

Deciduous fruits		No. of trees	Citrus fruits		No. of trees
	1910	1914		1910	1914
Apple	2,143,815	2,780,229	Orange	10,803,221	9,596,220
Apricot	2,593,884	3,157,718	Lemon	1,810,616	1,829,999
Cherry	601,520	952,118	Pomelo	18,886	79,561
Fig	549,875	503,240	Lime	1,716	201,151
Nectarine	63,773				
Olive	1,190,452	860,107	Total	12,634,439	11,706,931
Peach	10,922,994	11,496,643			
Pear	1,499,932	2,101,236	Nuts		
Plum	1,059,453	1,140,189	Almond	1,204,382	1,880,686
Prune	8,998,831	9,307,064	Walnut	891,147	1,113,709
Total	19,624,529	32,298,544	Total	2,095,529	2,994,395

FINANCIAL CONDITIONS IN CALIFORNIA

San Francisco is the financial center of the Pacific Coast. On June 30, 1914, the latest date for which complete figures are available, the principal items of the resources and liabilities of the banks of San Francisco and of California were as follows:

Capital, Surplus and Undivided Profits

	San Francisco	California
National banks	\$51,438,230.84	\$101,262,886.29
State commercial and trust.....	14,357,467.85	53,835,301.10
Total commercial	\$65,795,698.69	\$155,098,187.39
Savings banks	16,001,197.09	47,352,294.68
Totals	\$81,796,895.78	\$202,450,482.07

Individual Deposits

	San Francisco	California
National banks	\$103,184,320.51	\$271,214,981.67
State commercial and trust.....	40,194,572.05	126,335,872.53
Total commercial	\$143,378,892.56	\$397,550,854.20
Savings banks	199,617,131.00	449,221,639.57
Totals	\$342,996,023.56	\$846,772,493.82

Loans and Discounts, Including Overdrafts

	San Francisco	California
National banks	\$123,877,797.54	\$281,557,719.19
State commercial and trust	32,604,396.79	118,411,250.63
Total commercial	\$156,482,194.33	\$399,968,969.82
Savings banks	138,429,091.78	347,442,878.85
Totals	\$294,911,286.11	\$747,411,848.67

Resources

	San Francisco	California
National banks	\$230,293,576.65	\$506,577,606.41
State commercial and trust	81,817,703.12	238,702,325.10
Total commercial	\$312,111,279.77	\$745,279,931.57
Savings banks	217,243,389.37	506,519,374.92
Totals	\$529,354,669.14	\$1,251,799,306.49

As compared with the reports of June, 1913, the tables show an increase of resources during the year of \$33,750,083.20 in San Francisco, and \$58,011,308.82 in the State.

During 1914 the normal course of business and finance was unfavorably affected, not only by the outbreak of the European war, but by steadily increasing difficulty of procuring funds for any form of permanent investment.

The Banks of California

On June 30, 1914, there were in California 473 state banks, with 77 branch offices. Of these 138 are commercial banks; 137 are savings banks; 7 are trust companies; 175 are commercial and savings departmental banks; 14 are commercial, savings and trust companies; 1 is a savings and trust company; and 1 is a commercial and trust company. They are called departmental banks for the reason that the laws of this State, while permitting banks to do both commercial and savings business, require a complete segregation of the two lines of business, including a physical separation of assets, so that the failure of one department does not necessarily impair the solvency of the other.

The following statement from Mr. W. R. Williams, Superintendent of Banks, dated October 31, 1914, shows the financial condition of California.

"It should be a matter of congratulation that all of the state banks of California have been successful during the fiscal year when there was an unquestioned depression in business and a financial strain since imposed primarily by the European war. It is gratifying, however, to report that the state banks of California, unlike similar institutions in some other states, have felt unsettled conditions only in a very small way. The state banks of California have practically escaped the consequences of the financial unrest which has spread so widely over the world. Our banks have endured less of commercial stagnation than have others and the prosperity of the state has not even been held stationary, much less retarded. Capital is active, industry is widespread and enterprise is successful. This is the significant story told in the condition of state banks for the fiscal year now under discussion."

	1912-1913	1913-1914	Increase	Decrease
Assets	\$705,871,341.80	\$714,330,336.89	\$8,458,995.09	
Loans and discounts	458,397,609.31	465,417,351.17	7,019,741.86	
Cash on hand	26,934,808.68	30,548,948.12	3,614,139.44	
Capital	62,668,893.96	62,173,816.66		\$495,077.30
Surplus	27,785,528.11	28,489,063.82	703,535.71	
Undivided profits	15,271,219.99	10,524,715.30		4,746,504.69
Individual deposits	561,921,694.36	575,557,512.10	13,635,817.74	

With reference to the decrease in capital, it should be stated that it was caused by the retirement of the banking institution of a corporation with a capital of \$1,100,000 and a surplus of \$110,000 and which was engaged only in the trust banking business. There were 19 new banks organized in the State during 1913-14. Five of these are commercial banks; two are savings banks; two are trust companies; and ten are departmentized, having a commercial and savings bank business.

Clearing House Exhibits

The bank clearings of San Francisco have more than doubled since 1900. Los Angeles, the other large financial center of the State, while showing a smaller aggregate, has a larger proportionate increase.

The San Francisco Clearing House was organized May, 1876. The clearings for the 8 2/3 months of that year were \$476,125,237.97. In 1890 they were \$851,066,172.90. In 1900 they were \$1,029,582,574.78. In 1913 they were \$2,624,428,824.74.

In the 38 years of its existence the total amount of clearings has been \$44,233,283,096.16. The average daily clearings increased from \$1,927,624 in 1876 to \$8,895,554.66 in 1912, and \$6,892,889 in 1914.

The gain in volume of clearing house business strongly reflects the increase in the mineral and agricultural products and the increase in the amount of exports and imports, as well as the sales of real estate and the building operations of the city.

Other cities of California show an increase that indicates the marvelous development of the State now going on.

The record of clearings in the two principal cities in the past thirteen years is as follows:

San Francisco

Year	Clearings.
1902.....	\$1,373,362,025.31
1903.....	1,520,200,682.07
1904.....	1,534,631,136.73
1905.....	1,834,549,788.51
1906.....	1,998,400,779.06
1907.....	2,133,882,625.80
1908.....	1,757,151,850.08
1909.....	1,979,872,570.06
1910.....	2,323,772,870.99
1911.....	2,427,075,543.46
1912.....	2,677,561,952.27
1913.....	2,624,428,824.74
1914.....	2,516,004,817.00

Los Angeles

Year	Clearings
1902.....	\$245,516,094.85
1903.....	307,316,530.90
1904.....	345,343,956.35
1905.....	478,985,298.40
1906.....	578,635,516.82
1907.....	581,803,982.00
1908.....	505,588,756.02
1909.....	673,165,728.81
1910.....	811,377,487.47
1911.....	942,914,424.19
1912.....	1,168,941,700.02
1913.....	1,211,167,980.18
1914.....	1,145,167,110.19

The total clearings for the United States for 1912 showed an increase as compared with 1911 of but 9 per cent; San Francisco had an increase of over 10 per cent and Los Angeles of over 23 per cent. For 1912 San Francisco was eighth in the list of clearings and Los Angeles twelfth. In 1913 San Francisco held its rank of eighth on the list and Los Angeles was fourteenth. The same was true in 1914 also.

Bank Clearances for 1914

San Francisco	\$2,516,004,817
More than a hundred and fifty millions greater than the combined clearings of the next three largest Coast cities:	
Los Angeles	\$1,145,167,110
Seattle	633,061,084
Portland	578,884,018
	2,357,112,212

In San Francisco government checks have been paid by national banks instead of by the Sub-Treasury since February, 1913. It is estimated that this will account for some \$20,000,000 of the apparent decrease in the clearings since that date.

Other Clearing House Cities

	1910	1911	1912	1913	1914
Oakland	\$157,460,588.22	\$172,666,406.17	\$222,570,346.29	\$188,730,763.00	\$176,074,062.82
Sacramento ..	69,447,281.94	78,376,700.21	92,747,060.69	108,268,688.39	103,286,903.09
San Diego.....	66,708,874.00	82,724,333.47	131,894,087.00	134,145,293.00	103,102,297.90
Fresno	37,930,473.07	39,782,776.05	51,400,594.73	57,384,801.12	53,442,675.00
Stockton	32,277,582.58	40,356,582.58	45,064,374.68	45,925,831.09	47,257,207.00
San Jose	27,828,978.64	29,877,754.37	35,882,473.55	35,730,898.59	36,344,989.14
Pasadena	40,570,318.90	41,607,900.10	47,144,736.48	47,818,722.51	43,946,058.76
Bakersfield (organized in March, 1912.....)			21,500,000.00	23,656,106.08	23,561,216.96
Long Beach (organized May 18, 1914).....					17,378,405.86

FEDERAL BUSINESS IN SAN FRANCISCO FOR 1914

Postal receipts	\$3,255,306	Imports, total value	\$112,021,675
Customs receipts	5,022,789	Exports, foreign	64,784,092
Postal savings dept.	1,158,470	Imports, Atlantic States	26,157,106
Internal revenue receipts	9,520,000	Imports, Alaska, etc.	21,080,477
Imports, total value	69,995,217	Tonnage, arrivals, 1914 tons	7,449,715

The commerce of the port reached nearly every country in the world, as shown by the following statement prepared from data furnished by the Foreign Trade Department of the San Francisco Chamber of Commerce:

FOREIGN TRADE OF SAN FRANCISCO HARBOR FOR 1914 AS COMPARED WITH THAT OF 1913

(Figures secured from the U. S. Custom House.)

Imports

For 1913 the imports amounted to \$62,650,298, while the total for 1914 was \$69,995,217, an increase of \$7,344,919.

Exports

For 1913 the exports were \$69,670,853, but war conditions caused them to drop to \$64,784,092 in 1914, a decrease of \$4,886,761. The following is the summary by countries:

Argentina: Increase, \$1,158. Canned fruit.
 Australia-Tasmania: Increase, \$2,573,825. Electrical appliances, films, gasoline and canned salmon.
 Austria-Hungary: Decrease, \$8,984. Coffee, prunes and canned fruit.
 Barbados: Increase, \$2725. Canned salmon.
 Belgium: Increase, \$245,621. Barley, cocoanut cake.
 Bolivia: Decrease, \$28,061. Machinery.
 British India: Increase, \$169,987. Railroad ties, machinery, lubricating oils, milk.
 Other British East Indies: Increase, \$12,565. Milk, malt, roofing felt.
 Other British Oceania: Decrease, \$1,732. Canned fruit, carriages.
 British South Africa: Increase, \$7,959. Lumber, paint and machinery.
 Canada: Increase, \$914,230. Bottles, coal oil, fuel oil, gasoline.
 Chili: Decrease, \$151,885. Residuum.
 China: Decrease, \$287,935. Books, cigarettes, gunboats.
 Costa Rica: Increase, \$563. Flour and wheat.
 Columbia: Decrease, \$23,837. Flour, gunpowder, wine.
 Cuba: Decrease, \$38,087. Canned fruit, prunes and wine.
 Denmark: Increase, \$661,278. Barley, dried fruits.
 Dutch East Indies: Decrease, \$153,305. Coal oil.
 Dutch Guiana: Decrease, \$2,666. Canned salmon.
 Dutch West Indies: Decrease, \$6. Dried apples.
 Ecuador: Decrease, \$3,144. Dynamite.
 Egypt: Increase, \$22,885. Railroad ties, canned vegetables.
 England: Increase, \$2,847,338. Barley, distillate, gasoline.
 Finland: Increase, \$4,874. Dried fruit.
 France: Decrease, \$857,232. Canned fruit, prunes, tallow.
 French East Indies: Increase, \$5,062. Roofing felt, paint.
 French Oceania: Decrease, \$31,356. Canned salmon, cordage, naphtha.
 French Guiana: Decrease, \$13. Canned salmon and canned fruit.
 Germany: Decrease, \$1,663,195. Dried fruit.
 German Oceania: Increase, \$11,064. Canned salmon, lumber.
 Guatemala: Decrease, \$33,194. Malt, tallow.
 Honduras: Increase, \$187,269. Flour, corn, beans.
 Hongkong: Increase, \$602,132. Apples, coal oil, tobacco, lead.
 Ireland: Increase, \$621,907. Barley, redwood, wheat.
 Italy: Decrease, \$20,676. Canned fruit, prunes, tallow.
 Jamaica: Decrease, \$8,986. Canned salmon.
 Japan: Decrease, \$12,898,029. Automobiles, raw cotton, machinery, pipe.
 Japanese China: Decrease, \$3,285. Milk, threshing machines.
 Mexico: Decrease, \$451,057. Hay, iron mfrs., machinery.
 Netherlands: Decrease, \$98,897. Prunes, dried apricots, tallow.

New Zealand: Increase, \$373,696. Apples, raisins, salt, soap.
 Nicaragua: Increase, \$58,548. Flour, fuel, oil, tallow.
 Norway: Increase, \$129,938. Barley and dried fruit.
 Panama: Increase, \$191,712. Fuel, oil, iron mfrs., mules.
 Peru: Decrease, \$77,967. Electrical appliances, lumber.
 Philippine Islands: Increase, \$374,211. Boots and shoes, drugs, soap, machinery.
 Portuguese Africa: Increase, \$851,803. Barley.
 Russia in Europe: Increase, \$104,991. Cotton and films.
 Salvador: Decrease, \$30,175. Fertilizers, wines.
 Scotland: Increase, \$246,889. Barley, lumber.
 Siam: Increase, \$48,182. Cigarettes, roofing felt.
 Spain: Decrease, \$3,216. Threshing machines, canned fruit.
 Straits Settlements: Increase, \$524,797. Cigarettes and machinery.
 Sweden: Increase, \$184,947. Barley, prunes, other fruit.
 Uruguay: Decrease, \$88,989. Lumber, canned fruit, asphalt.
 Venezuela: Increase, \$387. Books, nursery stock.

Commercial Movements by Sea at All Ports in California for 1914

The following figures are taken mostly from the annual reports of the United States Collectors of Customs in the different districts.

	Imports	Exports
San Francisco	\$69,995,217	\$64,784,092
Humboldt	7,331,000	10,075,800
Los Angeles	3,247,000	1,183,117
San Diego	464,554	88,850
Calexico	1,239,865	423,000
Tia Juana	57,728	326,312
Campo	38,883	49,488
Andrade	1,849	20,493
	\$82,375,996	\$76,951,152

In the exports from Humboldt County, the lumber exports represent \$6,277,000 and the exports of dairy products amounted to \$2,129,800.

PROGRESS IN THE METROPOLIS

The ninth anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.

San Francisco has won the admiration and wonder of the world by the courage and energy of its rebuilding, and stands today more fit than ever to occupy its proper place among the great cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represented sixty-one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of its people has been justified and greater prosperity for the future is assured.

To this prosperity the whole State contributes and in it shares.

San Francisco can now claim to be, in character and equipment of its new structures, the most up-to-date city in the world. It was authorized by the Federal Government to invite the nations of the world to the Panama-Pacific International Exposition in 1915, and that enterprise was inaugurated in Golden Gate Park, October 14, 1911, by the turning of the first shovelful of earth by Wm. H. Taft, then President of the United States.

That it had nobly fulfilled this trust was shown on February 20, 1915, when the greatest of all Expositions was formally set in motion at the appointed hour by President Woodrow Wilson, with whose office in Washington an electrical connection had been made.

Reconstruction of San Francisco

The reconstruction of the city involved vast expenditures by the municipality for streets, sewers, fire system, school houses and other municipal buildings, all of which have been of the most substantial character. The following list, from the Chamber of Commerce, covers the period from 1906 to June, 1915:

The buildings destroyed in San Francisco by the fire of 1906 numbered 28,188, valued at \$105,000,000. The money expended by private parties for labor on the new buildings has amounted to some \$100,000,000, while the municipality has expended large sums on the same account.

The private construction, as shown by the official permits issued, gives the record as follows, up to December 31, 1911:

Expended Since 1906

New sewer system, nearly complete.....	\$6,150,000
High pressure fire system.....	5,750,000
Municipal street railways.....	5,500,000
Asphalt plant	60,000
Civic Center	8,800,000
Schools	7,500,000
Hospitals	3,000,000
Fire and police stations.....	510,000
Public Library lands.....	740,000
Hall of Justice and County Jail.....	1,350,000
Hetch Hetchy Water Supply—lands and preliminary work ...	2,000,000
Docks	9,000,000
Streets and pavements	15,000,000
New parks and public playgrounds.....	1,360,000
Traffic tunnels	4,600,000
Private buildings	400,000,000

Total \$471,320,000

	Number Buildings	April, 1906, to Dec. 31, 1910 Cost	1911 Cost
Class A	117	\$24,927,260	\$1,809,097
Class B	135	9,256,871	1,010,500
Class C	1,830	55,835,617	8,145,673
Frames	16,951	67,965,376	8,345,956
Alterations	11,280	18,897,080	1,604,248
Total	30,316	\$176,882,204	\$20,915,474
For 1911	6,079	20,915,474	
Grand total	36,395	\$197,797,678	
Add 15 per cent for under valuation...	.....	29,669,650	

\$227,467,328

For 1912 permits were issued for buildings to cost \$23,338,563.00. Contracts for the same were let and recorded as follows:

Brick	\$14,246,796
Frame	9,826,927
Alterations	2,195,283

Total for 1912 \$26,269,006

For the last two years, the following figures are supplied by the Chief Building Inspector:

	1913		1914	
	No.	Cost	No.	Cost
Class "A"	21	\$4,037,543	11	\$384,800
Class "B"	23	1,437,138	7	511,900
Class "C"	235	6,561,936	157	4,495,038
Frames	2,131	7,242,271	1,920	6,669,723
Alterations	3,196	1,758,376	3,718	1,775,362
Totals	5,606	\$21,037,264	5,813	\$13,836,823

These figures are for private construction alone. The figures for Public and Exposition Buildings in 1913 brought the total up to \$32,797,259. The total for 1914, including eighty-two Exposition Buildings costing \$9,943,577, and twelve public buildings costing \$4,397,163, amounted to \$28,177,563. It should be stated that these figures cover only the permits. The actual cost of construction was considerably higher.

For the first five months of 1915 the authorized permits amounted to a valuation of \$5,835,221.

In this connection it may be interesting to know the grand total of all buildings erected in San Francisco from the date of the disaster in 1906 to the present year.

Buildings Erected from May, 1906, to May 31, 1915

	No.	Cost
Class "A"	188	\$34,315,754
Class "B"	204	14,830,486
Class "C"	2,866	84,369,780
Frames	26,794	101,120,369
Alterations	26,909	19,696,372
Public buildings	14	4,592,163
Harbor Commission	6	310,389
Panama-Pacific Exposition	83	9,951,577
Total	57,064	\$269,186,890

San Francisco, always famous for its hostelries, is now credited with being one of the greatest hotel cities in the world. Fully 98 per cent of its hotels and apartment houses have been built within the last eight years and they are nearly all thoroughly modern and up-to-date. A careful tabulation shows that San Francisco now has 487 hotels with over fifty rooms each and a total of 55,963 rooms; there are also 619 family hotels, under fifty rooms, with a total of 18,849 rooms. There are 880 apartment houses with 13,708 apartments and 41,805 rooms. The grand total of hotels and apartment houses is 1,986, and the total number of rooms is 116,617.

This exceptional hotel accommodation, together with the new Auditorium located in the Civic Center at a cost of \$1,000,000, insures San Francisco's future as a great convention city. The Auditorium has a seating capacity of 12,000.

San Francisco bears the same relation to the Pacific Coast that New York does to the nation. For the year 1914 San Francisco ranked:

- 1st in actual value of land and improvements per capita.
- 3rd in average capital per national bank.
- 5th in building contracts.
- 5th in foreign imports.
- 5th in total national banking capital.
- 7th in foreign exports of domestic goods.
- 8th in bank clearings.
- 11th in number of manufacturing establishments.

Over one-half the population are savings bank depositors.

The total amount expended in the rebuilding of San Francisco is equal to the cost of the Panama Canal.

San Francisco has a lower percentage of bonded debt to the assessed valuation than any larger city in the United States.

Of the eleven principal cities of the United States, San Francisco has the lowest percentage of mortgage indebtedness on real estate and the highest actual valuation of land and improvements per capita.

BUILDING ACTIVITIES THROUGHOUT THE STATE

As was expected, the building operations of most of the leading cities of the State showed a slight decline in 1914, as will be seen by the following table:

Valuation			Valuation		
Los Angeles	{ 1905	\$15,382,057	Sacramento	{ 1906	\$994,811
	{ 1909	13,260,703		{ 1909	2,063,394
	{ 1910	21,684,100		{ 1910	2,164,456
	{ 1911	23,004,185		{ 1911	3,087,392
	{ 1912	31,367,995		{ 1912	2,793,544
	{ 1913	31,641,921		{ 1913	3,416,057
	{ 1914	18,361,925		{ 1914	2,329,978
Oakland	{ 1906	4,445,692	Pasadena	{ 1905	1,953,532
	{ 1909	5,318,512		{ 1909	1,888,826
	{ 1910	6,695,789		{ 1910	2,133,528
	{ 1911	6,202,685		{ 1911	2,183,713
	{ 1912	9,009,734		{ 1912	2,166,352
	{ 1913	9,106,191		{ 1913	2,787,507
	{ 1914	5,217,520		{ 1914	2,133,781
San Diego	{ 1905	1,193,170	San Jose	{ 1905	908,525
	{ 1909	2,632,100		{ 1909	1,195,280
	{ 1910	4,005,200		{ 1910	1,750,000
	{ 1911	5,703,685		{ 1911	569,369
	{ 1912	10,001,004		{ 1912	857,166
	{ 1913	7,035,797		{ 1913	485,006
	{ 1914	3,143,321		{ 1914	590,280
Stockton	{ 1906	488,372	Fresno	{ 1907	129,880
	{ 1909	565,195		{ 1909	332,897
	{ 1910	506,494		{ 1910	990,040
	{ 1911	938,857		{ 1911	1,075,941
	{ 1912	1,129,170		{ 1912	1,697,294
	{ 1913	946,273		{ 1913	1,776,666
	{ 1914	1,117,787		{ 1914	1,122,505
Bakersfield	{ 1913	760,744	Santa Rosa	1914	175,456
	{ 1914	283,970	Long Beach	1914	283,870

San Francisco Harbor

San Francisco has the second largest land-locked harbor in the world, being exceeded only by that of Rio de Janeiro, Brazil.

In area the Bay of San Francisco covers 420 square miles and has a shore line, exclusive of navigable inlets, of 100 miles. The City and County (Consolidated) of San Francisco has a water frontage on the bay of 10 miles. The pierhead line is 800 feet from the bulkhead line and is fixed by the United States Government. On January 1, 1915, there was a total completed sea wall 18,690 feet in length, 34 completed piers and three planned, from 600 to 1,000 feet in length and from 100 to 200 feet in width. The total berth space of all piers is 48,728 lineal feet. The dock area of all piers is 3,471,697 square feet.

The San Francisco harbor front is owned by the State of California. The new docks and wharves are being built under a \$10,000,000 State bond issue, the interest on same and all sinking and redemption funds being paid for out of the harbor revenues. The Embarcadero, the street fronting the harbor, is also owned by the State, which operates a Belt Line Railroad over its entire length. On January 1, 1915, the Belt Line was 20,600 feet long. Freight can be unloaded directly on the freight cars on the Belt Line from the freighter alongside the dock (the Belt Line being connected with the main lines of all the transcontinental railroads and the spur tracks serving San Francisco's industrial area), so that freight can be transferred direct from steamer to warehouse or factory.

Deep water is found at all the docks and wharves on the San Francisco water front. Typhoons and hurricanes are unknown and the greatest Pacific liners dock without difficulty in any weather and at all stages of the tide. Ten fathoms is the average depth in the bay, so that safe anchorages are obtainable at all times. A depth of six and seven fathoms is reached at the end of all the piers. The only transport docks owned by the United States are at San Francisco.

At the present time the Federal Government has made an arrangement with the Hunters' Point Dry Dock Company (on the San Francisco side) to construct a dry dock 1,050 feet long. This will be the largest dry dock on the Pacific Ocean. The United States will have first call on this dock at all times for the docking and repairing of government vessels. Two docks are now operated at Hunters' Point, one of them being 750 feet long.

All of the passenger and freight steamers sailing from San Francisco leave from the San Francisco side of the bay, with the exception of some small lumber schooners. Direct steamer connections may be made from here to all points along the Pacific Coast of North and South America, Russia, Japan, China, the Philippines, the Orient, Hawaii, New Zealand and Australia, as well as services through the Canal to Atlantic Coast points and Europe.

Oakland Harbor

The work on the Oakland water front has included the deepening of a channel along the Inner Harbor by the Federal government, upon which the sum of \$4,337,068.35 has been expended. In addition, the city of Oakland has spent \$2,503,000. The last appropriation by the Federal government amounted to \$98,000. This has made available along the Inner Harbor 48,120 feet of berthing space, which at the present time is 35% occupied.

Work on dredging slips, building wharves, and providing deep-water approaches to these wharves has been done and is being done by the Santa Fe and Southern Pacific Railways, and the Santa Fe has just completed a new \$1,500,000 freight terminal at the foot of Alice Street in Oakland, on the Inner Harbor. They have at that point more than 30 acres of water front property close to the heart of the city.

The city of Oakland has just completed a quay wall 2,000 feet long, extending from the foot of Clay Street to Myrtle Street, where approximately \$800,000 has been spent. The wall is 22 feet thick at the base and 8 feet at the top. It has 27 feet of water in front of it at low tide. Railroad tracks and modern fireproof warehouses have been constructed on it, while modern water and oil systems supply the ocean vessels. Coal bunkers are located at the west end of the wall and a high-pressure salt water system for fire protection runs along First Street 300 feet distant. This means an ideal water terminal in the center of the wholesale and manufacturing district, and within walking distance of the center of the city.

Oakland Harbor is already the base of the lumber trade, and will be the center of the coal trade as soon as the work is completed on the new \$250,000 coal handling plant of the Western Fuel Company, which is being constructed on the Inner Harbor.

There are three large shipbuilding plants along the Inner Harbor, and many smaller ones.

On the western water front, in what is known as the Key Route Basin, the city of Oakland has paved the way for the development of a great terminal. It owns 294 acres of tide lands, and has expended more than \$500,000 in getting them ready for use. This project immediately adjoins the Southern Pacific Oakland Pier project, where that railroad is constructing a great water terminal.

Lieutenant-Colonel Thomas H. Rees, of the United States Army Engineers, has prepared plans for a continuous deep-water channel along the east bay shore from Oakland Pier to Point Richmond, which has the endorsement of the organizations in the cities interested, and which will be of great importance in the future development of the many miles of water front centering at Oakland.

Richmond Harbor

The city of Richmond, eight miles across the bay from San Francisco, in Contra Costa County, is carrying out a harbor development project of striking magnitude and importance for a city that has been incorporated but nine years and is only twelve years on the map.

The project consists of an Inner Harbor with a channel to deep water, a projecting arm and a tunnel and roadway through the rim of hills skirting the natural deep water frontage of the city, the tunnel and road to connect with a wharf 740 feet long at the outer end of the harbor channel and provide immediate use of this much of the new project while the rest is under construction.

After the shortest campaign on record for Government recognition, according to Col. Thomas H. Rees, U. S. A., who surveyed the new harbor, Richmond's project has been approved and accepted by the United States Army Board of Engineers for Rivers and Harbors at Washington with accompanying recommendations to the Secretary of War for \$425,000 as a preliminary appropriation. The Secretary of War had made similar recommendation to Congress and that body, through its committee, included \$100,000 in the Rivers and Harbors Bill to start the project. War conditions have blocked Government aid for new projects to this time, but assurances come from Washington that Richmond will get its first \$100,000 at this winter's session.

In the meantime work has gone forward steadily on the project, the city of Richmond having voted \$1,170,000 in bonds. The municipal tunnel has been completed, as well as the highway. Wharf No. 1, at the end of this highway, is well under way.

Dredging has also been carried along on the inner part of the new harbor. The work that is being done will be met by an equal amount on the part of the Government. More money will be asked from the Federal treasury as the city proceeds with construction and more bonds will be voted by the city.

The total cost of the new harbor, which extends, including the main channel, from a point beyond the Santa Fe wharves, to Point Isabel, in the vicinity of Stege Station, will be something like \$4,000,000.

The depth of the main harbor will be 24 feet at the beginning with a final depth of 30 feet. The arm will have 20 feet depth.

Los Angeles Harbor

The Port of Los Angeles (San Pedro) is a broad harbor, protected by a great breakwater more than two miles long, which was built by the U. S. Government at a cost of \$3,000,000. This is the Outer Harbor. Extending half a mile into this protected harbor are solid earth-filled piers with wharves, some of which are the best that engineering skill could devise. There are now more than one and one-half miles of these wharves built in the Outer Harbor, with from thirty to thirty-five feet of water in front of them. Any vessel sailing the Pacific can round the breakwater in any kind of weather, day or night, at any stage of the tide and moor at a wharf under its own power within twenty minutes from the time it leaves the open sea.

The channel leading from the Outer Harbor to the Inner Harbor is 400 to 900 feet wide, with a depth of 30 feet at low tide, extending two and one-half miles to a turning basin 1,600 feet in diameter. This channel is lined with wharves along most of its length. In the Inner Harbor are over 20,000 feet of channels 200 feet wide and 20 to 34 feet deep.

In the last five years Los Angeles has voted \$5,500,000 for harbor improvements and it stands pledged to spend a total of \$10,000,000 by 1919, the U. S. Government having expended about \$5,600,000 since 1871.

In 1912 Los Angeles became the greatest lumber port in the world, receiving in that year 720,883,630 feet of lumber. The net tonnage of vessels entering the harbor increased from 356,371 tons in 1902 to 2,759,274 tons for the fiscal year ending June

30, 1914—just before the opening of the Canal. The total tonnage of all commodities, exclusive of lumber, for the fiscal year 1914 amounted to 1,682,794 tons, with a value of more than \$80,000,000. The opening of the Panama Canal has greatly increased this tonnage, especially of general merchandise.

There are now completed over 6,000 feet of municipal wharves, with others contemplated. There are completed over 3,800 feet of freight sheds, 100 feet wide, together with necessary rail terminals and paved streets. There are also 9,625 feet of wharves operated by railroad companies, 9,060 feet operated by private wharf companies, and 6,160 feet by lumber companies.

San Diego Harbor

The Bay of San Diego has an area of 22 square miles, is completely land-locked, and has a depth of water over the bar, at low tide, of 35 feet. The main channel inside the bay will average from 1500 to 2000 feet in width and from 35 to 70 feet in depth, at low water. By act of the State Legislature, May, 1911, the city of San Diego was granted absolute control of its water-front, and the tide-lands adjacent thereto. This generous gift was granted upon the condition that the city expend within three years from the above date the sum of \$1,000,000 in improvements in the Bay of San Diego. The improvements imposed under the terms of the Act are now in course of construction, and consist of one pier 130 feet in width, 800 feet in length, 2675 lineal feet of bulkhead, and the reclamation of between 50 and 60 acres of tide-lands. A depth of water of 35 feet will be maintained alongside the pier, and a depth of 20 feet in front of the bulkhead. The latter can be deepened at any time shipping demands it. The port enjoys the possession of a tract of tide-lands comprising an area of 1460 acres. This land lies adjacent to the city and constitutes its water-front, about 11 miles in extent. This stupendous asset is perhaps possessed by no other port in the world. The filling in of the tide-lands will be gradually accomplished by the continual operation of two dredgers now owned by the city.

The rapid increase in the size of ships, both merchant and naval, will eliminate within a few years all but the most capacious ports. Ships of 1000 feet in length, 100-foot beam, and 35-foot draft will be common, and there are but three harbors on the Pacific Coast capable of accommodating such vessels, viz: San Diego, San Francisco and Puget Sound. These three are located on a coast line of 1300 miles, and not one of them is within 500 miles of the other. The importance of these ports is therefore self-evident.

Eureka Harbor

Humboldt Bay, a beautiful body of water at the very doors of the town, is fourteen miles long and from half a mile to four miles wide. It is traversed by twenty-one miles of lineal channel. It is protected by two peninsulas of low sand dunes—one from the north and one from the south.

Being so completely land-locked, this harbor is of the utmost importance to a coast so barren of good harbors as is the Pacific; but its usefulness has in the past been seriously impaired by shifting sand bars which obstructed its entrance, and by the shallowness of some of its inner channels. In 1889 the general government began improving the entrance to the harbor by extending two jetties of rock, one on each side of the channel, so as to confine the waters to a permanent way. This work was completed in September, 1899, at a cost of more than two millions of dollars.

A survey made in 1903 showed the least depth of water in the channel to be in excess of 30 feet at low tide: by 1905 this had decreased to 27 feet; and in September, 1907, a survey found the channel depth reduced to 22½ feet, and led the engineers to recommend the restoration of the jetties at an estimated cost of \$1,037,400. In 1910, Congress adopted this project, and appropriated \$150,000 for the first year's work. In 1911, \$170,000 was appropriated, and the project placed upon the continuing contract list, insuring its completion. The work was begun in 1912, and

by July 30, 1915, the south jetty will be fully reconstructed, when work will be begun on the north jetty. The original estimated amount has been appropriated and used, and in 1914 \$300,000 additional was allotted, and for 1915, a similar sum was granted. Doubtless the total cost of this reconstruction will be over \$2,000,000. The depth of water in the channel is now over 24 feet at low tide.

An average of nearly 1,000 vessels arrive and depart from this harbor annually, and the value of their outgoing cargoes averages over \$10,000,000, while the incoming shipments are about 75% of that amount. The foreign export shipments are confined almost entirely to redwood lumber, the amount so shipped in 1914 being 51,916,681 feet, valued at \$1,351,146.

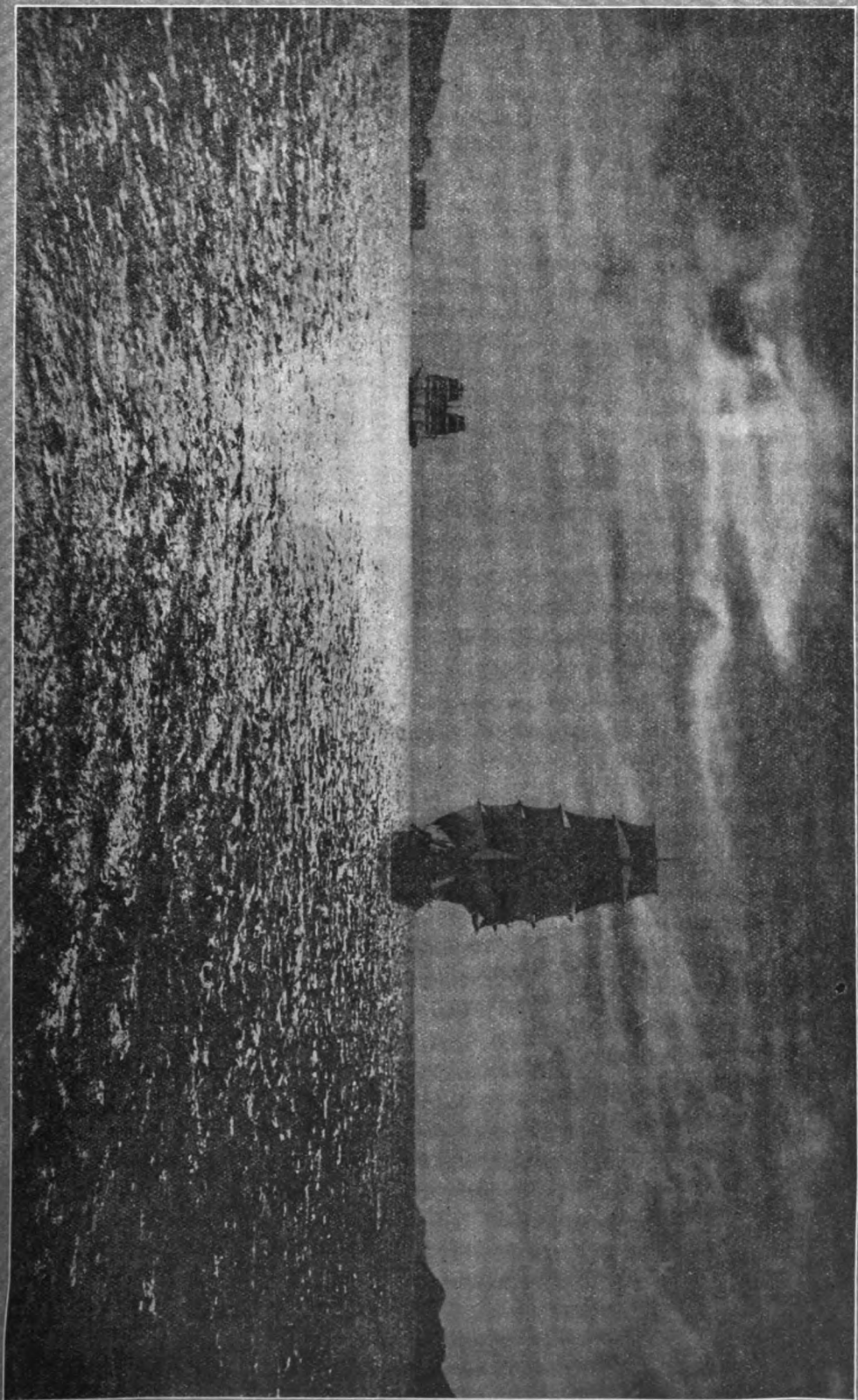
Monterey Harbor

Monterey Bay is one of the largest of the coast, being over twenty miles in width at the mouth, ten miles inland, and in shape resembling a horseshoe. It is the nearest harbor for a part of California embracing 11,000,000 acres of arable land. Monterey County contains no large cities, but has about one-tenth of the population and assessed valuation of the State. It now has an actual water transportation of over 550,000 tons per annum and a rail shipment of from 150,000 to 200,000 tons yearly. According to the United States Engineers the harbor has but one serious defect. Continued storms create an undertow which causes vessels to chafe against the piers. To overcome this an appropriation of \$600,000 has been made by Congress to construct a breakwater, provided the local interests contribute \$200,000 for that purpose.

Santa Cruz Harbor

Santa Cruz, noted as a seaside resort, is not on the ocean coast, but nestles in behind Light-house Point, on the shore of Monterey Bay. In a semicircle behind the city lie the beautiful Santa Cruz Mountains. The bathing beach is nearly a mile long and slopes gradually from the famous beach buildings out into the bay. In years past a small coasting steamer touched occasionally at Fisherman's Wharf, which does not extend out far enough to make landings safe. The new Municipal Wharf, which has just been completed, reaches out into the bay over a half mile and already two lines of steamers are making regular trips from both north and south. Many tons of general merchandise are being handled over the new wharf as well as thousands of tons of cement, lime, canned goods and other products shipped from the place on special steamers.





OUTWARD BOUND THROUGH THE GOLDEN GATE

Courtesy "California's Magazine"

SHIPMENTS OUT OF STATE BY RAIL OF FRUITS, WINE, BRANDY AND VEGETABLES

Tons of 2,000 Pounds.

Kinds	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910 By rail	1911 By rail	1912 By rail	1913 By rail	1914 By rail
Green deciduous fruits.....	96,943.6	91,176.5	93,673.7	100,390.9	101,198.7	73,983.6	115,083.6	113,679.0	106,066.0	161,224.0	203,275	204,876	187,884	167,603.9	186,393	212,806
Citrus fruits	131,916.8	226,546.6	323,871.4	225,668.8	299,628.4	385,747.6	454,083.4	383,418.9	413,896.1	399,094.0	475,959	446,384	580,799	479,098.8	238,222	561,136
Dried fruits	86,925.3	90,052.8	106,987.1	151,944.5	149,531.1	156,769.3	118,479.3	112,176.9	184,821.6	133,846.0	154,756	128,892	114,433	194,175.2	111,783	93,014
Raisins	36,008.7	36,047.0	43,314.0	47,575.2	39,963.4	54,134.7	32,634.7	42,457.3	.....	29,610.0	61,584	67,278	46,513	.....	39,279	47,688
Nuts and olives	6,608.4	6,518.4	8,462.4	10,918.9	9,377.4	9,810.5	7,610.5	5,131.5	7,198.0	10,887.5	12,438	12,308	12,751	15,399.1	11,611	9,622
Canned fruits and vegetable's	75,240.0	75,556.9	83,229.1	80,634.8	94,204.8	86,077.9	91,877.9	77,626.5	104,624.6	85,135.0	71,223	73,746	83,258	89,946.1	106,998	65,245
Raw vegetables .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93,500.8	86,014	78,829	130,738	129,659.6	147,277	247,512
Wine and brandy.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70,758.2	75,656	82,144	83,952	93,249.8	83,012	53,085

Carloads 10 Tons Each

Total carloads fresh, dried and canned fruits and vegetables and wines and brandy.

1897.....	48,072	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	120,690
1898.....	56,149	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	109,456
1899.....	55,483	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	116,267
1900.....	66,798	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	116,913
1901.....	83,733	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	92,457
1902.....	77,538	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	129,010

The figures for 1912-14 were reported by the Southern Pacific, Santa Fe and Western Pacific lines. Previous to 1912 the figures reported were from the Southern Pacific and Santa Fe only.

Lack of uniformity in classification of some kinds of products by the several roads prevents their segregation more specially in this table. For instance, in some cases "dried fruits", are made to include prunes and raisins to comply with the economics and methods of account of the freight offices.

Previous to 1910, shipments of fruits, vegetables, etc., by rail and sea were not segregated. The pack of canned fruits and vegetables is given on another page.

Dairy and poultry products, fresh and canned fruits and vegetables taken on at this port as supplies and not included above, reach a value of about \$1,650,000.

The three railroad lines mentioned above report that they brought into California, during 1914, 11,626 tons of poultry and eggs, and 3,101 tons of dairy products.

CITRUS FRUITS

The citrus industry in California, according to Mr. G. Harold Powell, represents \$200,000,000 capital invested, 10,000 growers, and 100,000 who depend upon it for a livelihood. According to the 1914 reports of the County Horticultural Commissioners, there were 107,286 acres of bearing orange trees and 64,651 non-bearing; of lemons there were 18,970 acres bearing and 17,463 non-bearing.

The shipments of citrus fruits for the season of 1913-14 exceeded those of the record year 1910-11 by 2,154 carloads. The record of shipments for the last fourteen years is as follows:

Shipments of Citrus Fruits from California

Season	CARS		
	Oranges	Lemons	Total
1900-01			24,900
1901-02			19,180
1902-03			23,871
1903-04	26,160	3,239	29,399
1904-05	26,044	5,378	31,422
1905-06	23,697	3,913	27,610
1906-07	26,313	3,507	29,820
1907-08	27,770	4,959	32,729
1908-09	34,320	6,196	40,516
1909-10	28,317	4,782	33,099
1910-11	39,630	6,764	46,394
1911-12	34,329	5,961	40,290
1912-13	15,893	2,192	18,085
1913-14	45,594	2,954	48,548

The value of the citrus fruit shipped out of California during the last season is estimated to be at least \$25,000,000.

Shipments of Citrus Fruits from Different Sections

	Season 1911-12 Cars	Season 1912-13 Cars	Season 1913-14 Cars
Oranges from Southern California.....	30,327	13,574	39,024
Oranges from Central and Northern California....	4,002	2,913	2,954
Lemons from California	5,961	2,192	6,570
Total.....	40,290	18,085	48,548

The Citrus Protective League reports that the supply of lemons shipped from California increased from 26.7% in the period 1900-04 to 48.5% in 1914-15. The following table shows the supply of lemons in the United States for three five-year periods and the estimated supply for 1914-15; the years end on June 30th.

5-year average	Imports tons	California shipments tons	Total tons	Increase over last 5 years
1900-04.....	78,750	28,620	107,370	.....
1905-09.....	74,531	52,963	127,494	18.8%
1910-14.....	80,942	63,812	144,754	13.5
1914-15.....	80,803	76,086	156,889	8.4

DECIDUOUS FRUIT IN CALIFORNIA

The last report of the State Board of Equalization gives the number of deciduous trees in bearing in 1914 as follows: Apple, 2,044,916; apricot, 2,578,778; cherry, 628,699; peach, 10,199,568; pear, 1,751,326; plum, 1,017,881. These figures are probably much below the real number.

The total production in 1914 can be only approximated. The three leading railroads report shipments of 212,806 tons. In the table below the figures are for actual carloads, without regard to the number of tons in a car. The minimum fixed by the railway companies is thirteen tons to a carload, but a carload is often thirty tons. In bringing together figures from different sources, it should be borne in mind that some authorities use the ten-ton limit, while others count actual carloads. The following figures are supplied by "The California Fruit News," which is one of our most reliable sources of information:

Fresh Deciduous Fruit Shipments from North of Tehachapi, in Actual Carloads

Variety	1906	1907	1908	1909	1910	1911	1912	1913	1914
Apricots	16	71	231¾	208¾	289¾	223½	195½	158¾	382
Cherries	150	98	208¾	249¾	250½	216¼	244¼	230¾	166¾
Grapes	2,052	3,460	3,816¾	5,875	4,947½	6,374½	6,357½	6,363¾	8,773
Peaches	584	699	1,980¾	2,599	2,517¾	2,027	1,621¾	2,359	2,144¾
Pears	1,513	1,039	2,701½	2,638	2,361	2,324¾	3,134½	2,459¾	2,725¾
Plums	1,220	1,039	1,763	1,526¾	1,552½	1,366	1,775½	1,706¾	1,906¾
Sundry				20¾	17	16¼	15¼	18½	49
Apples (below)	770	1,085	2,216						
Miscellaneous*									
Total carloads	6,305	7,491	12,917	13,117	11,936	12,548¾	13,343¾	13,331¾	16,146¾

*Includes quinces, persimmons and figs previous to 1909, not counted separately.

Total fresh deciduous fruit shipments from south of Tehachapi in 1913 amounted to 575 carloads.

Apples

The above table of shipments does not include the apple production in 1914. The Statistical Abstract of the United States for 1914 gives 6,000,000 bushels as the production in California, which is exactly double the production of 1913.

The County Horticultural Commissioners report 43,532 acres in bearing and 26,991 acres non-bearing. The number of trees in 1914, as given by the State Board of Equalization, was 2,044,916 bearing and 735,313 non-bearing. The leading county, according to the latter report, was Santa Cruz, with 663,213 bearing trees; Sonoma was second, with 235,660 trees; Humboldt is credited with 108,000, and Monterey with 100,000 trees.

The Pacific Fruit Express Company shipped 914 cars out of the State during 1914, as compared with 358 carloads the previous year. These figures do not include local shipments in both refrigerator and box-car equipment.

The Watsonville Chamber of Commerce reports the 1914 shipments from that point as being 4,000 carloads green apples, 150 carloads evaporated apples and 800,000 gallons of cider and vinegar. Sebastopol's shipments of apples was about 650 cars, each containing 640 boxes. About 250 cars went to the East. In addition probably 1,500 tons of apples went to the canneries and about 8,000 tons to the driers.

Dried Fruits

Nearly all kinds of deciduous fruits are dried for the market, but prunes, peaches and apricots are the most important. The dried output of all, except figs, varies largely according to the season, the demand of the Eastern market for fresh fruit, and the prices offered by the canners.

Output of Cured Fruits, including Prunes and Raisins

("California Fruit News")

	1909 Tons	1910 Tons	1911 Tons	1912 Tons	1913 Tons	1914 Tons
Apples	3,000	3,000	3,500	3,600	1,900	4,500
Apricots	14,000	15,250	11,000	20,000	10,500	20,500
Figs	4,000	3,775	5,500	5,000	5,000	6,500
Peaches	20,000	25,000	14,000	30,000	23,000	37,000
Prunes	75,000	40,000	95,000	102,500	48,000	56,000
Raisins	70,000	62,500	65,000	95,000	65,000	98,000
Various other.	2,500	1,750	3,750	3,000	2,000	2,500
Total tons..	188,500	151,275	197,750	259,100	155,400	225,000

Prunes

Next to raisins (the figures for which are given on another page under the heading of grapes), prunes are most important in the list of dried fruits. While they are grown commercially in about one-half of the counties of the State, the principal center of the industry is in Santa Clara County, which last year reported 5,295,000 bearing trees. The total number of bearing trees in the State, as given by the State Board of Equalization, was 8,078,830, with 1,227,234 non-bearing trees. The value of the 1914 crop has been roughly estimated at \$5,000,000.

CALIFORNIA PRUNE OUTPUT, 1898-1914.

Year	Tons	Year	Tons
1898	45,210	1907	53,000
1899	56,863	1908	28,500
1900	87,000	1909	77,500
1901	40,800	1910	45,000
1902	98,500	1911	88,000
1903	82,500	1912	97,000
1904	67,500	1913	45,000
1905	31,250	1914	56,000
1906	92,500		

VEGETABLES IN CALIFORNIA

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

Complete statistics are not available, there being no accurate data with regard to the amount of fresh vegetables supplied to the home markets. The shipments of fresh vegetables to Eastern markets in 1914 amounted to about 247,512 tons, and there shipments are increasing year by year.

Principal Vegetable Districts

Asparagus.....Delta Region, Los Angeles, Alameda.
 Cabbage.....Los Angeles, San Francisco, San Jose.
 Cauliflower...Los Angeles, San Francisco and Alameda.
 Celery.....Los Angeles, San Francisco, Stockton
 Melons.....Los Angeles, Stockton.
 Potatoes.....Delta Region, Los Angeles, San Francisco and Alameda.
 Tomatoes.....Los Angeles, Delta Region, Alameda.
 Onions.....San Jose, San Francisco, Delta Region and other points.
 Artichokes....Los Angeles, San Jose and other points.
 Lettuce.....Los Angeles, San Jose and other points.
 Rhubarb.....Alameda, Sacramento Valley, San Joaquin Valley, Central California.

Shipments of melons, etc., from Imperial County and celery, etc., from Orange County are included in Los Angeles territory.

The "Delta Region" includes all the country of the lower Sacramento and San Joaquin rivers.

Shipments from North of Bay Counties by rail are included in those from San Francisco.

By potatoes is meant only the shipments of early potatoes.

In 1914 the total shipments of cantaloupes from Imperial Valley amounted to 4,455 carloads, making a total of 83,860,920 melons. The shipments from Stanislaus County, as reported by the Turlock Board of Trade, amounted to 519 cars of cantaloupes, valued at \$139,092, and 668 cars of watermelons valued at \$120,240. In addition, express shipments in crates amounted to 36,213 pounds, valued at \$29,505.

The production of onions in 1914 is estimated at 1,931,000 sacks, with a value of \$2,960,000. Contra Costa County alone reported \$750,000 worth during the year.

The Irish potato crop, as estimated by Mr. T. A. Burns, of the San Francisco Fruit Distributors, amounted to about 9,736,000 sacks, valued at \$10,600,000. He estimates the sweet-potato crop at 1,200,000 crates, worth \$1,200,000. Large acreages of potatoes were reported from Contra Costa, Monterey, Orange, Stanislaus and Kern Counties.

Contra Costa County reported celery shipments to the extent of \$210,000 and asparagus shipments amounting to \$525,000.

Orange County reported a chili pepper crop valued at \$600,000 in 1914.

Beans and Lima Beans

While exact statistics are difficult to obtain, leading authorities estimate the total value of the 1914 bean crop in California at approximately \$10,000,000. One leading authority gives the following classification:

	Quantity bags	Farm value
Lima beans (80 lb. bags).....	1,500,000	\$6,000,000
Pinks	500,000	1,200,000
Small whites	300,000	960,000
Large whites	100,000	240,000
Black eyes	75,000	235,000
Other varieties	160,000	440,000
Total.....	2,635,000	\$9,075,000

Partial List of Vegetable Crops, 1914

Beans, bags	2,635,000	\$9,075,000
Sugar beets, tons (paid growers—estimated).....	863,256	7,000,000
Onions, bags	1,931,000	2,960,000
Potatoes, Irish, bags	9,736,000	10,600,000
Potatoes, sweet, crates.....	1,200,000	1,200,000
Seeds, field and garden (estimated).....		2,500,000
Grand total.....		\$33,335,000

Canned Fruit and Vegetable Pack

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Fruits—	1914			1913			1912		
	No. 2½, 3 and smaller (all grades)	Gallons (all grades) number of dozens	Cases	No. 2½, 3 and smaller (all grades)	Gallons (all grades) number of dozens	Cases	No. 2½, 3 and smaller (all grades)	Gallons (all grades) number of dozens	Cases
Apples	9,185	84,225		2,305	29,230		9,500	70,750	
Apricots	949,475	192,880		714,970	133,910		772,775	125,230	
Blackberries	24,080	59,790		27,370	48,040		55,375	46,630	
Cherries	97,295	8,930		150,215	12,450		319,335	32,560	
Grapes	43,210	6,475		35,215	6,450		40,960	6,225	
Loganberries	10,900	5,000		12,465	3,270		16,965	4,415	
Pears	749,425	56,315		488,370	41,490		832,350	41,850	
Peaches, free	684,050	204,075		523,475	245,275		480,660	103,140	
Peaches, cling	2,325,275	296,380		1,508,500	171,300		1,469,275	160,980	
Plums	89,400	21,040		52,770	13,205		148,990	26,300	
Raspberries	3,890	580		5,165	425		8,520	570	
Strawberries	16,140	1,995		8,465	790		25,800	8,670	
Other fruits	17,305	11,560		7,675	1,730		23,565	2,510	
Total fruits	5,019,630	949,245		3,536,960	657,565		4,204,070	629,820	
Grand total fruits (cases)			5,968,875			4,194,525			4,833,900
Vegetables—									
Asparagus	762,035	6,775		716,650	6,350		714,900	4,300	
Beans, string	67,860	9,205		83,255	6,935		76,690	7,665	
Peas	149,320	12,775		86,970	6,900		251,275	18,150	
Tomatoes	1,680,950	212,700		989,550	157,010		1,396,900	224,200	
Other vegetables	103,855	22,780		103,365	35,345		66,390	29,025	
Total vegetables	2,764,020	264,235		1,979,790	212,540		2,506,155	283,340	
Grand total vegetables (cases)			3,028,255			2,192,330			2,789,495
Grand total pack (cases)			8,997,130			6,386,855			7,623,395

THE CANNING INDUSTRY IN CALIFORNIA

The aggregate number of cases of all kinds of fruit and berries canned in 1914 and the vegetable output was larger than for any previous year.

California Canning Season

(J. K. Armsby Co.)

Approximate Period of Packing the Different Varieties.

Fruits.

Apricots	Latter part of June to latter part of August.
Blackberries	Latter part of June to fore part of September.
Cherries	Latter part of May to middle of July.
Currants	Last three weeks of June.
Gooseberries	Latter part of May to latter part of June.
Grapes	Fore part of September to end of October.
Nectarines	Latter part of July to fore part of September.
Pears	Latter part of July to latter part of September.
Peaches, Free	Latter part of July to middle of October.
Peaches, L. C.	Latter part of July to middle of October.
Peaches, W. C.	Middle of August to middle of October.
Plums, Green Gage	Middle of July to middle of September.
Plums, Egg	Middle of July to middle of September.
Plums, Golden Drop	Fore part of August to fore part of September.
Plums, Damson	Latter part of August to latter part of October.
Quinces	Middle of September to middle of November.
Strawberries	Fore part of May to latter part of October.

Vegetables.

Asparagus	Latter part of March to middle of June.
String beans	Middle of June to end of November.
Peas	Middle of May to latter part of June.
Tomatoes	Latter part of August to latter part of November.

Canned Fruit and Vegetable Packs

Year	Fruits cases	Vegetables cases	Year	Fruits cases	Vegetables cases
1900	2,775,896	803,617	1908	4,734,663	1,501,885
1901	2,677,072	1,076,058	1909	3,047,001	1,242,720
1902	2,252,790	1,151,268	1910	4,008,549	2,250,645
1903	2,733,504	1,343,574	1911	4,182,650	2,516,655
1904	2,839,733	961,783	1912	4,833,900	2,789,495
1905	3,283,296	1,192,455	1913	4,194,525	2,192,330
1906	3,109,225	1,747,595	1914	5,968,875	3,028,255
1907	2,982,955	1,941,755			

GRAPES AND RAISINS

California is the most important factor in viticulture in the United States. It has over 90,000,000 vines, more than all the rest of the United States. It represents an investment of \$150,000,000 which returns an annual income to the grower of over \$20,000,000. Over 100,000 people are dependent upon California's viticultural industry. This includes 15,000 heads of families that own vineyards, 700 wine-makers, and the laborers who do the picking and hauling, besides those employed in the wineries and those engaged in cultivating and handling our raisin and table grapes.

According to the 1913-14 report of the State Board of Equalization, 386,669 acres were devoted to grape growing in the spring of 1914; 335,258 acres were bearing, and 51,411 non-bearing. Of the total, 71,017 acres were devoted to table grapes, 120,792 to raisin grapes, and 194,860 to wine grapes. The State Board of Viticultural Commissioners (report of January 25, 1915) gives the following estimate: 330,000 acres of vines in California; about 50,000 are table grapes; 110,000 are raisin grapes; and about 170,000 are wine grapes.

Table Grapes

The shipments of table grapes during 1914 were 8,473 carloads of crated table grapes and 300 carloads in sawdust; 1,000 carloads were consumed in the State. The total production of table grapes was about 250,000 tons; the gross value of crated table grapes sold in Eastern markets was about \$7,500,000. The counties reporting the largest acreage of table grapes in bearing in 1914 were as follows: San Joaquin, 16,850 acres; Tulare, 16,000; Sacramento, 8,600.

California Raisin Crop

The center of the raisin industry is in Fresno County, although raisin grapes are grown in twenty-two counties of the State.

Year	Tons	Year	Tons
1897.....	46,852	1906.....	47,500
1898.....	40,365	1907.....	60,000
1899.....	35,784	1908.....	60,000
1900.....	47,167	1909.....	70,000
1901.....	37,125	1910.....	56,000
1902.....	54,375	1911.....	67,500
1903.....	60,000	1912.....	85,000
1904.....	37,500	1913.....	65,000
1905.....	43,750	1914.....	90,000

Of the fifty-eight counties in California only nine have more than 1,000 acres of raisin grapes in bearing. The State Board of Equalization reports the acres of raisin grapes bearing in 1914 as follows, for the leading counties:

County	Acres	County	Acres
Fresno.....	78,490	Sutter.....	3,015
Kings.....	13,642	San Diego.....	2,968
Madera.....	3,300	San Bernardino.....	1,845
Colusa.....	3,120	Stanislaus.....	1,280

The 1914 production of the leading varieties is estimated by the California Associated Raisin Company as follows: Muscat raisins, 60,000 tons; Thompson Seedless, 18,000 tons; Sultanas, 9,000 tons; Malagas and other varieties, 4,000 tons. Total, 91,000 tons.

Fresno County produces about 60 per cent of the California raisin crop, and nearly twice the quantity produced by Spain, which produces from 15,000 to 30,000 tons and has held the lead for centuries. It was in 1892 that the California raisin crop first equaled that of Spain, and it has been increasing the difference ever since.

Seeded Raisins

Fresno County is the center of the seeded raisin industry, where it originated. The following figures (which are only approximate) show the wonderful increase in this popular form of raisins in California during the last nineteen years:

Year	Tons	Year	Tons
1896.....	700	1906.....	24,000
1897.....	3,500	1907.....	26,000
1898.....	7,000	1908.....	24,000
1899.....	12,000	1909.....	28,000
1900.....	14,000	1910.....	31,500
1901.....	14,000	1911.....	33,000
1902.....	16,000	1912.....	35,500
1903.....	18,000	1913.....	35,000
1904.....	18,000	1914.....	40,000
1905.....	21,000		

WINE AND BRANDY

During the past ten years the manufacture of California wines has steadily increased, as shown by the following table. The yield for 1911 was about 49,280,000 gallons. The production of sweet wines that year was the greatest in the history of the industry, viz., 23,280,044 gallons, while the dry wine output totaled 26,000,000 gallons. The production of 1913 was less, but some 4,702,219 gallons more than in 1912; that of 1914 was half a million gallons less than in 1913.

Wine and Brandy Production, 1897-1914

Year	Dry Wines Gals.	Sweet Wines Gals.	Brandy Gals.
1897.....	28,736,400	5,197,500	1,442,468
1898.....	10,750,000	7,779,000	1,250,000
1899.....	15,103,000	8,330,000	1,699,035
1900.....	16,737,260	6,940,300	3,256,513
1901.....	16,473,731	6,270,300	1,688,482
1902.....	28,224,146	14,835,146	4,564,173
1903.....	21,900,500	12,670,356	1,972,000
1904.....	15,589,342	13,571,856	4,420,839
1905.....	20,000,000	10,700,000	1,750,000
1906.....	26,000,000	15,000,000	1,250,000
1907.....	27,500,500	15,500,000	1,345,000
1908.....	22,500,000	14,750,000	1,500,000
1909.....	27,000,000	18,000,000	2,000,000
1910.....	27,500,000	18,000,000	2,500,000
1911.....	26,000,000	23,280,044	2,000,000
1912.....	22,500,000	17,797,781	1,799,539
1913.....	25,000,000	17,307,600	1,695,406
1914.....	22,000,000	16,620,212	3,320,744

California wines have a wide and growing market at home and abroad. The Italian-Swiss Colony's exhibit at the recent Genoa Exposition, for instance, was awarded the diploma of gold in competition with the wines of the whole world. The railroad shipments, given on another page, go mainly to Eastern points, while those by sea go to the four quarters of the world.

The counties reporting the largest bearing acreages of wine grapes in 1914 (State Board of Equalization) were these: Fresno, 22,540 acres; Napa, 22,000; San Joaquin, 19,450; Sonoma, 18,700; Sacramento, 17,550; Los Angeles, 11,138.

Export of Wine by Sea

Year	Cases	Gallons	Number of Countries Receiving
1908.....	.....	4,250,799	12
1909.....	.....	7,440,294	23
1910.....	.....	9,866,539	26
1911.....	11,535	15,125,375	32
1912.....	11,388	13,238,223	33
1913.....	6,933	12,935,239	24
1914.....	11,636	10,461,526	.....

The shipments of wine out of California by rail during 1914, as estimated by the Pacific Wine and Spirit Review, were 12,072,281 gallons and 48,000 cases. The exports by sea amounted to 10,461,526 gallons and 11,636 cases. A close estimate of the total valuation of wines exported would be \$9,088,038—not including many thousand gallons of brandy shipped out. Thirty-one countries outside of the United States received this wine and brandy.

The output of champagne naturally fermented in bottles during 1914 was about 1,100,000 bottles. Three manufacturers are at the present engaged in the making of this champagne.

The California brandy produced and deposited in the government bonded warehouses during 1914 amounted to 3,320,744 gallons. This gallonage does not mean the total of all brandy distilled. It is the amount presumed to be deposited for commercial purposes, and does not include the amount required and already used in the fortification of sweet wines in 1914.

Very little unfermented grape juice was made during the past year. It is estimated by the State Board of Viticultural Commissioners that 100,000 gallons were made in 1913, but not over 50,000 in 1914.

ALMONDS AND WALNUTS

The production of almonds fluctuates greatly; the crop of 1913 was only a little more than one-half that of 1908 or of 1912, which were the record crops. In 1914, however, the crop rose to within 500 tons of the record. The opportunities for this industry are shown by the fact that the United States produces only about 8,000 tons of almonds and imports 20,000 tons.

The State Horticultural Commission reported 15,747 acres of bearing almond trees in 1914 and 13,371 acres of non-bearing almonds, the reports being from 30 counties. According to the State Board of Equalization, the following counties had the largest number of bearing almond trees in 1914: Yolo, 210,000; San Joaquin, 165,940; Contra Costa, 150,200; Solano, 110,500; Sacramento, 100,000. The total number of trees reported from 42 counties was 1,489,768 bearing and 390,918 non-bearing.

The average annual production of almonds in California for the last fifteen years was 2,057 tons. The quantity grown is so small, comparing with the importations, that prices vary according as the latter are light or heavy.

The walnut crop is more regular, though the production for 1914 fell off about 3,000 tons. The California Walnut Growers Association anticipates a 15,000-ton crop in 1915. The shipments for 1914 were as follows: Los Angeles County, 3,585 tons; Orange, 2,887; Ventura, 1,339; Santa Barbara, 828 tons; north of Santa Barbara, 250 tons.

The acreage reported in 1914 by the State Board of Equalization was 689,208 trees bearing and 424,501 non-bearing.

The counties reported to have the largest number of bearing walnut trees are: Orange, 196,871; Ventura, 132,890; Santa Barbara, 52,700; San Joaquin, 52,160; San Luis Obispo, 50,000. The bearing acreage as compiled by Mr. George P. Weldon, of the State Horticultural Commission, was as follows: Orange, 11,965 acres; Ventura, 7,785 acres; Santa Barbara, 4,800 acres; San Joaquin, 200 acres.

The average production of walnuts in California for the last fifteen years was about 8,469 tons. The importations for 1913-14 amounted to 18,597 tons, but the average annual importation for the preceding nine years was about 13,471 tons.

Leading authorities place the aggregate value of California's almond and walnut crops at approximately \$4,000,000. The following table shows the production of both crops for a number of years:

Almond and Walnut Production, 1895-1914

Year	Almonds Tons	Walnuts Tons	Year	Almonds Tons	Walnuts Tons
1895.....	825	2,310	1905.....	2,125	5,750
1896.....	1,605	4,115	1906.....	900	6,125
1897.....	2,375	3,985	1907.....	750	8,250
1898.....	450	5,650	1908.....	3,000	8,000
1899.....	2,320	5,530	1909.....	1,650	7,500
1900.....	2,740	5,430	1910.....	2,750	8,500
1901.....	1,560	6,910	1911.....	1,700	12,000
1902.....	3,270	8,520	1912.....	3,000	11,500
1903.....	3,200	5,500	1913.....	1,750	12,000
1904.....	800	7,590	1914.....	2,500	8,889

THE OLIVE INDUSTRY

Olive culture is one of the oldest fruit industries of California. The first orchard was planted in San Diego in 1769 and that county is today a large producer of olives and olive oil. The industry has since spread over more than one-half the counties in the State and every year adds to the number of trees. There are now thirty-six counties reporting over 1,000 trees, ranging from San Diego in the south to Shasta in the north. The number of California olive trees bearing in the spring of 1914, as reported by the State Board of Equalization, was 638,184, with 221,923 non-bearing. The counties which lead in bearing trees, according to the same report, are as follows: Riverside, 114,300 trees; Tehama, 74,720; Fresno, 48,930; Sonoma, 46,000; Santa Barbara, 32,180; San Bernardino, 32,000; San Diego, 32,000. It is interesting to note, however, that Butte County has more than twice the number of non-bearing trees, 63,680.

Statistics of this industry are difficult to obtain. This industry is becoming more attractive from a remunerative point of view, and the removal of competition with adulterated oil by the Pure Food regulations has given quite an impetus to planting new trees. Estimate of the production for 1913 is given by the American Olive Oil Company at 1,500,000 gallons of olive oil, and 250,000 cases of pickled olives, six gallons to the case.

For 1913-14, the figures given by the "California Fruit News" show an importation of 6,217,560 gallons of oil and 5,316,364 gallons of olives.

It is estimated that the production of olives in California during 1914 was 27,500 tons, of a gross value of \$2,750,000. The acreage growing in California in 1914, as given by George P. Weldon from the reports of the County Horticultural Commissioners, was 13,204 acres bearing and 5,953 non-bearing.

Among the largest olive groves reported in the State is that of Sylmar (near Los Angeles), with 1,200 acres under one management, and a 2,000-acre tract near Porterville.

The California ripe olive is rapidly coming into favor. During 1914 it has appeared on the market in a new form, known as the dehydrated olive, whose success has not yet been fully proven.

THE DAIRY INDUSTRY

Dairying offers one of the greatest money-making opportunities in California, for the simple reason that the local consumption is much greater than the output. Butter, cheese and evaporated milk are being brought into the State in large quantities from other States and even from New Zealand and Australia. The importation for five months from Australasia alone amounted to 1,574,900 pounds of butter, and by far the greater part of the cheese consumed in the State is still being imported.

The State Dairy Bureau is strictly accurate in its statement that the opportunities for dairying in California are "certainly greater than any other part of the United States." For instance, alfalfa grows all the year and can be cut as many as six or seven times, with a yield as high as nine or ten tons to the acre. That the recognition of this fact is rapidly coming is shown by the other fact that a great deal of land which formerly went begging at \$25 per acre is now selling for \$200 per acre.

The following statistics, taken from the reports of the State Dairy Bureau and from other authoritative sources, show that this industry is rapidly coming to the front.

Annual Value of Dairy Products of State

1912	
Butter, 54,940,886 pounds	\$16,905,310
Cheese, 4,785,617 pounds	739,856
Condensed, evaporated and powdered milk, 9,770,784 pounds	961,662
Casein, 1,065,000 pounds	53,250
Market milk and cream	10,000,000
Calves produced on dairies	2,000,000
Skim milk and buttermilk	1,500,000
Total	\$32,160,078
1913	
Butter, 55,542,709 pounds	\$17,840,318
Cheese, 5,600,972 pounds	899,516
Condensed, evaporated and powdered milk, 8,637,928 pounds	777,468
Casein, 665,000 pounds	33,250
Market milk, cream and ice cream	11,000,000
Calves produced on dairies	2,000,000
Skim milk and buttermilk	1,500,000
Total	\$34,050,552
1914	
Butter, 59,286,460 pounds	\$16,368,992
Cheese, 6,016,815 pounds	950,055
Condensed, evaporated and powdered milk, 14,153,401 pounds	1,076,300
Casein, 992,917 pounds	46,146
Market milk, cream and ice cream	11,500,000
Calves produced on dairies	2,500,000
Skim milk and buttermilk	1,500,000
Total	\$33,941,493

Production of Butter (Pounds)

Year	Creamery method	Old method	Totals
1896	10,097,323	21,508,117	31,605,440
1897	10,866,646	17,811,793	28,678,439
1898	10,410,479	13,280,549	23,691,028
1899	12,725,814	12,143,270	24,869,084
1900	16,486,695	12,296,164	28,782,859
1901	19,017,512	10,713,370	29,730,882
1902	21,593,021	9,935,741	31,528,763

Since 1902 the total production has increased as follows:

Year	Pounds	Year	Pounds
1903.....	34,676,311	1909.....	49,595,869
1904.....	35,636,909	1910.....	45,819,741
1905.....	41,961,047	*1911.....	50,380,736
1906.....	44,044,578	*1912.....	54,940,886
1907.....	44,599,211	*1913.....	55,542,709
1908.....	48,469,585	*1914.....	59,286,460

*Reported by State Dairy Bureau.

Irrigation and Butter Production

As showing the effect of irrigation on the dairy interests, the following exhibit, giving the production of butter in pounds in the principal counties in which irrigation is practiced, is instructive:

Counties	1908	1909	1910	1911	1912	1913	1914
Fresno	3,315,926	3,721,262	3,290,825	3,803,644	4,144,404	3,878,289	3,292,572
Kern	521,495	545,900	565,900	693,413	732,059	566,965	986,457
Kings	2,419,651	3,432,879	3,218,036	3,552,542	3,069,881	2,313,963	3,164,620
Merced	2,831,846	1,396,865	2,510,269	3,102,222	1,351,049	3,910,815	3,876,875
Sacramento	1,277,771	1,592,138	1,102,012	1,405,054	1,900,417	1,936,560	1,649,153
San Joaquin	1,605,152	2,350,000	1,425,543	941,430	1,336,344	1,215,644	1,292,474
Stanislaus	4,113,866	4,155,701	4,363,296	5,166,515	6,894,225	7,541,900	8,184,390
Tulare	2,729,377	2,307,238	3,072,198	3,955,583	3,947,284	3,971,217	4,362,290
Yolo	944,268	807,787	1,103,114	1,096,718	1,104,509	1,034,902	1,061,703
Imperial	1,165,763	1,677,640	1,948,941	2,885,941	4,110,736	5,398,228	5,710,287
Humboldt*	4,495,041	4,715,998	4,790,280	5,238,382	5,095,014	5,168,990	5,251,887

*Non-irrigated.

Imperial County is entirely dependent on irrigation, and its butter production, since its formation in 1908, has grown nearly five-fold, as the above shows.

Cheese

While the State has more than doubled its butter production since 1900, the cheese production has increased over a million pounds. The cheese produced is, with a few exceptions, only that made by the ordinary Cheddar process. There is a considerable amount of fancy and hand-made cheese which has not been reported. Out of the fifty-eight counties in the State, 34 produced cheese during the year 1914. Here are the totals for the past fifteen years:

Cheese Production, 1899-1914

Year	Pounds	Year	Pounds
1899.....	5,294,938	1907.....	5,928,942
1900.....	4,989,960	1908.....	6,162,514
1901.....	5,681,366	1909.....	5,931,194
1902.....	6,503,441	1910.....	4,648,348
1903.....	7,218,639	1911.....	4,580,495
1904.....	6,133,898	1912.....	4,785,617
1905.....	6,020,672	1913.....	5,600,972
1906.....	6,418,480	1914.....	6,016,815

Counties Which Produced Over 200,000 Pounds of Cheese in 1914

County	Pounds	County	Pounds
Santa Clara	768,101	Sutter	368,860
Monterey	728,111	San Luis Obispo	246,090
Marin	558,630	San Benito	269,577
Sacramento	542,330	Santa Cruz	218,292
Humboldt	386,000	Sonoma	206,736
		San Mateo	204,175

Dairy Imports

Large quantities of butter and cheese continue to come from the East and from Australasia, notwithstanding the superior advantages presented in this State for enlarging this branch of farming and for creamery development. It is interesting to note that the San Francisco market alone received in 1914, 10,091,500 lbs. of cheese and 22,580,950 lbs. of butter.

The following are the monthly receipts of butter and of cheese, and prices therefor, in San Francisco for the three years ending September 30, 1914:

Butter in San Francisco

	1911-1912		1912-1913		1913-1914	
	Pounds	Price cents	Pounds	Price cents	Pounds	Price cents
October	1,946,800	30.68	2,035,900	34.00	1,538,100	32.48
November	1,300,350	31.39	1,819,900	33.04	1,433,300	32.56
December	1,114,900	33.03	1,696,500	33.66	1,703,100	31.85
January	1,236,400	35.38	1,767,500	34.28	1,931,600	29.92
February	1,723,400	34.60	1,378,100	35.10	1,689,900	28.19
March	1,645,900	31.42	2,008,100	35.43	2,107,200	22.85
April	2,183,600	27.71	2,694,700	29.10	2,811,200	23.06
May	2,883,600	25.29	2,614,000	26.98	2,435,300	23.83
June	2,309,400	27.60	2,106,200	27.72	1,964,400	24.02
July	2,620,400	27.82	1,711,100	28.95	1,871,600	24.55
August	2,626,400	31.31	2,593,600	32.43	1,765,500	27.26
September	1,957,700	33.08	1,479,500	34.78	1,329,750	30.81
Total	23,548,850	30.77	23,905,100	32.12	22,580,950	27.61

Cheese in San Francisco

	1911-1912		1912-1913		1913-1914	
	Pounds	Price cents	Pounds	Price cents	Pounds	Price cents
October	728,080	14.57	956,000	16.92	616,400	17.03
November	619,500	16.50	700,500	17.93	776,300	18.37
December	496,400	15.96	757,800	15.89	736,100	17.69
January	594,500	16.15	599,700	15.44	559,400	18.06
February	780,200	16.42	482,800	16.63	704,600	18.89
March	552,900	18.85	792,000	15.47	739,700	16.45
April	987,800	16.92	657,600	15.88	1,044,700	14.76
May	1,762,200	13.59	915,500	14.22	865,100	13.52
June	1,584,600	13.69	958,100	14.79	1,282,700	12.99
July	1,391,400	14.12	919,300	15.54	1,027,300	13.23
August	1,504,200	14.04	1,214,000	17.16	1,079,000	14.08
September	756,900	14.65	570,400	16.82	660,200	14.37
Total	11,758,680	15.46	9,523,700	16.06	10,091,500	15.79

The Three Leading Dairy Counties

According to the last report of the State Dairy Bureau, whose figures are for the year ending September 30, 1914, the following are the three counties which lead in butter production:

County	No. of Creameries	Pounds
Stanislaus	6	8,184,390
Imperial	7	5,710,287
Humboldt	9	5,251,887

Butter is of course only one of the dairy products, but its valuation approximates at least two-thirds of the total. Detailed figures of the three leading counties for the calendar year 1914 are not complete, but the available figures are as follows, as reported by the leading commercial organization in each county:

Stanislaus County

Article	Weight—Lbs.		Value
Butter	8,184,390	8,184,390	
Cream	2,040,400	816,160 (<i>Butter</i>)	
Total butter and cream		9,000,550	\$2,754,168.00
Condensed milk	524,525		77,884.65
Cheese	91,000		14,378.00
Buttermilk	8,784,000		8,895.00
Totals			\$2,855,325.65

Imperial County

Article	Weight—Lbs.	Value
Butter	7,300,000	\$1,971,000.00
Cheese	365,000	51,000.00
Buttermilk	18,833,145	17,660.00
Milk	136,856,000	456,217.00
Total	163,354,145	\$2,495,977.00

Imperial Valley realizes no revenue from condensed or dry milk, but its skimmed milk is consumed by hog raisers at an average price of 35 cents per cwt. There is no cream sold outside of the Valley at present.

Humboldt County

Article	Weight—Lbs.	Value
Butter	6,152,600	\$1,660,310.00
Cheese	289,000	43,500.00
Condensed milk	1,862,750	141,000.00
Dry milk	1,915,340	266,100.00
Fresh buttermilk	63,500	160.00
Fresh cream	26,200	2,880.00
Casein	1,331,760	73,250.00
Total	11,641,150	\$2,187,200.00

While the weight of butter shipped is over 350,000 pounds more than that of last year, the value is nearly \$140,000 less—"Humboldt's tribute to the removal of the tariff."

The commercial production of casein, now produced extensively in the northern counties, is a comparatively new branch of the dairy industry. Casein is used as a sizing in making high grades of paper and also for piano keys, billiard balls, and other articles formerly made exclusively of ivory.

THE POULTRY INDUSTRY

The farm value of poultry and eggs produced in California is about \$18,000,000, according to Mr. George H. Croley, president of the Federated Poultry Association. The leading poultry districts of the State, arranged in order of their importance and value of product, are as follows:

1. Petaluma District, including Santa Rosa and Sebastopol.
2. California south of Tehachapi—eight counties.
3. Hayward-Livermore, including the suburbs of the city of Oakland.
4. Santa Cruz-Watsonville-Salinas.
5. San Jose-Gilroy-Hollister (Santa Clara Valley).
6. Sacramento-Stockton.
7. San Joaquin Valley, excepting that portion included in district No. 6.
8. Sacramento Valley, excepting that portion included in district No. 6.
9. Sonoma-El Verano-Napa.
10. Santa Maria-Arroyo Grande.
11. Martinez-Concord-Walnut Creek (San Ramon Valley).
12. Northwestern Coast District.
13. Northeastern Mountain District.
14. Eastern Mountain District.

The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally. The largest incubator factory in the world is in Petaluma and turns out about 100,000 chicks per month, and runs to full capacity most of the year.

The average chicken ranch near Petaluma consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, quite a number of larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1 per year.

Notwithstanding the remarkable development of the poultry business at Petaluma and other places, the increase is not sufficient to meet the demands of the immediate



Courtesy "California's Magazine"

THREE MILLION BABY CHICKS LEAVE PETALUMA EVERY YEAR, FOR NEW HOMES

market. The rapidly expanding population of the State requires the importation in season of about 425 carloads of live and 75 carloads of dressed poultry to San Francisco and Los Angeles, besides several million dozen eggs each year from Eastern points, and there is no immediate prospect of the home supply overtaking the market. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County and has the advantage of a very low freight rate to San Francisco. The market business done from that point, and its growth, are reflected in the following figures:

For the last three years Petaluma has been shipping about 10,000,000 dozen of eggs annually and over 80,000 dozen of poultry.

The above figures represent actual shipments of eggs to market. It is but fair to say that over 1,600,000 dozen eggs are used for hatching and for home consumption. Three million baby chicks are estimated to have been shipped away.

The daily food requirements for poultry in the Petaluma district for an average year aggregate over 600 tons, or 1,200,000 pounds, of which wheat, corn, barley, bran and middlings form the largest part, viz.: about 490 tons.

Poultry Production in California, 1913

	Eggs Dozen	Poultry Dozen
Petaluma	10,464,744	88,824
Other points in Sonoma County.....	5,232,372	44,412
Total, other counties	27,500,000	168,000
Total for the State.....	43,197,116	301,236

The exact figures for 1914 are not procurable.

FARM ANIMALS

The following figures, from the Year-Book of the United States Department of Agriculture, give the total number and farm value of farm animals in California on December 31st of each year:

Kinds	1912			1913			1914		
	No.	Avg. price	Value	No.	Avg. price	Value	No.	Avg. price	Value
Horses	503,000	\$109.00	\$54,822,700	498,000	\$100.00	\$49,800,000	503,000	\$100.00	\$50,300,000
Mules	73,000	130.00	9,490,000	73,000	120.00	8,760,000	74,000	120.00	8,880,000
Milch cows	510,000	53.50	27,285,000	515,000	62.00	31,930,000	541,000	72.00	38,952,000
Other cattle	1,454,000	29.20	42,457,000	1,410,000	33.00	46,530,000	1,480,000	39.30	58,164,000
Sheep	2,603,000	3.70	9,631,000	2,551,000	3.80	9,694,000	2,500,000	4.50	11,250,000
Hogs	822,000	9.20	7,562,000	797,000	10.50	8,368,000	877,000	10.50	9,208,000
Total	5,965,000		\$151,247,700	5,844,000		\$155,082,000	5,975,000		\$176,754,000

It will be noticed that both the number and value of all classes of farm animals increased during 1914, but the supply is not yet equal to the demand. It may be roughly estimated that about 60,000 head of cattle, 160,000 head of sheep, and 75,000 hogs are slaughtered for market in the State each month, part of which comes from adjoining States.

Enlarged outside markets and increasing home demand promise well for the future of the stock-growing industry, especially of hogs. The Government gives the average age at which hogs are marketed in the Pacific States at twelve months.

The census report gives, as of April 15, 1910, the following from 80,304 farms reporting:

Kind	Farms reporting	Number	Value
Cattle	63,053	2,077,025	\$52,785,068
Horses and colts.....	76,119	468,886	47,099,196
Mules and mule colts.....	11,015	69,761	9,016,444
Asses and burros.....	1,099	2,592	347,315
Hogs	31,609	766,551	5,106,803
Sheep and lambs.....	3,857	2,417,477	8,348,997
Goats and kids.....	1,714	138,413	320,829

Dairy cows are included in cattle; 61,101 farms reported 467,332 cows and heifers, valued at \$18,597,328. The number and price is increasing.



Courtesy "California's Magazine"

Hogs in California

Mr. J. I. Thompson, of the California Swine Breeders Association, reports the total number of hogs of California at 825,000. The number of hogs slaughtered annually is about one-third of the number found in our markets. The large increase in the available supply of alfalfa and skimmed milk offers great opportunities to the hog raiser, but greater care and attention must be given to the feeding of grain also, in order that the dressing percentage may not fall below that of other States and discredit the home-grown product in the market. The possibilities of hog production are shown by the fact that the president of the Swine Breeders Association kept from 50 to 70 head of hogs for two months on one and one-half acres of alfalfa, with no other feed.

The assessed value of hogs in 1914 was \$979,167, as reported by the State Board of Equalization. The figures of the U. S. Dept. of Agriculture (1915) are as follows: 877,000 hogs; average value, \$10.50 per head; total farm value, \$9,208,000.

Wool Production of California

The wool clip for 1914 was the smallest since 1873 and about one-fifth that of 1876, the record year. The vast ranges that prevailed in the valleys of California are now covered by small farms and orchards, which accounts for the decline in this industry.

Year	Pounds	Year	Pounds
1873.....	32,155,169	1894.....	36,968,400
1874.....	39,356,781	1895.....	35,856,690
1875.....	43,532,223	1896.....	27,195,550
1876.....	56,550,973	1897.....	34,882,325
1877.....	53,110,742	1898.....	28,063,240
1878.....	40,862,091	1899.....	28,332,090
1879.....	46,903,360	1900.....	27,750,000
1880.....	46,074,154	1901.....	26,900,000
1881.....	45,076,639	1902.....	21,000,000
1882.....	40,529,119	1903.....	22,000,000
1883.....	40,848,690	1904.....	22,000,000
1884.....	37,415,330	1905.....	22,000,000
1885.....	36,561,390	1906.....	24,000,000
1886.....	38,509,160	1907.....	15,000,000
1887.....	31,564,231	1908.....	15,000,000
1888.....	32,569,972	1909.....	16,000,000
1889.....	34,008,370	1910.....	15,500,000
1890.....	34,854,640	1911.....	14,000,000
1891.....	33,183,475	1912.....	13,500,000
1892.....	35,802,930	1913.....	12,000,000
1893.....	33,169,375	1914.....	11,480,000

NOTE—"Pulled" wool not included in table.

GRAIN CROPS

The acreage devoted to grain in California (with the exception of barley) has been rapidly falling off year by year, for the reason that the large ranches formerly devoted exclusively to grain have been rapidly subdivided and planted to more profit-

able crops. Barley still leads all the cereals, with 1,941,506 acres sown in 1914. Wheat follows with 725,214 acres. Oats comes third, with 315,975 acres. Corn is fourth, with 89,144 acres. Rye is last, with 24,320 acres.

Fluctuation in Grain Production

The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1898 and of rye since 1907:

Year	Wheat bushels 60 lbs.	Barley bushels 48 lbs.	Corn bushels 56 lbs.	Oats bushels 32 lbs.	Rye bushels 60 lbs.
1898.....	12,403,700	12,263,461	1,184,040	1,943,304	.....
1899.....	29,666,666	14,046,087	1,536,975	1,845,787	.....
1900.....	20,933,333	19,769,760	1,351,975	1,477,771	.....
1901.....	28,751,500	26,162,780	1,850,793	4,887,374	.....
1902.....	18,759,490	23,489,065	1,839,150	5,148,583	.....
1903.....	14,880,990	21,075,000	1,777,162	5,756,964	.....
1904.....	10,895,216	24,418,604	1,350,000	5,250,000	.....
1905.....	5,660,360	22,094,186	1,204,000	4,735,000	.....
1906.....	8,333,330	26,162,790	1,100,000	4,300,000	.....
1907.....	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908.....	11,680,000	25,427,000	1,600,000	6,700,000	792,000
1909.....	11,550,000	31,270,000	1,740,000	6,280,000	842,000
1910.....	17,100,000	43,400,000	1,838,000	8,325,000	986,000
1911.....	8,640,000	40,600,000	1,836,000	7,140,000	136,000
1912.....	6,270,000	41,760,000	1,924,000	7,800,000	141,000
1913.....	4,200,000	33,150,000	1,815,000	6,636,000	120,000
1914.....	6,800,000	42,060,000	2,160,000	7,700,000	116,000

California Grain Crops in 1914

The following figures are taken from the Year-Book of the United States Department of Agriculture:

	Acres	Bushels	Farm value
Barley.....	1,402,000	42,000,000	\$24,815,000
Wheat.....	400,000	6,800,000	7,072,000
Oats.....	220,000	7,700,000	4,081,000
Corn.....	60,000	2,160,000	1,879,000
Rye.....	8,000	136,000	116,000

It appears from Department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley, which now equals in acreage and exceeds in yield and value all other grain crops combined.

The malting qualities of California barley give it a ready market abroad. In 1913 California ranked second among the States in the production of barley, Minnesota ranking first. In 1914 California ranked first, with a lead of over 10,000,000 bushels over Minnesota.

Oats are raised, in some parts of the State, more for hay than for threshing, while corn is but little used as feed for work animals. Barley has long been the main grain food in California, but of late years oats have come into use to quite an extent. The non-saccharine sorghums are also important in this respect.

The San Francisco Chamber of Commerce reports that 12,838,208 bushels of barley were exported from San Francisco in 1914.

According to the State Board of Equalization, a total of 1,941,566 acres was sown to barley in 1914. The leading barley counties were as follows: Monterey, 260,000 acres; Stanislaus, 182,443; Colusa, 181,804; Solano, 156,000; Madera, 105,000; Merced, 102,000; San Luis Obispo, 100,000.

The total area sown to wheat was 725,214 acres, the leading counties being as follows: Solano, 142,000 acres; Tehama, 58,700; Kern, Madera and San Luis Obispo, 50,000 each.

Acreage devoted to oats was 315,975. The three leading counties were: San Mateo, 35,500; San Joaquin, 30,000; Sacramento, 26,000.

There were only 89,144 acres in corn. The largest plantings were in Del Norte, 27,000 acres; Imperial, 12,482; Inyo, 13,000.

Of the 24,320 acres sown to rye in twelve counties, Merced led with 10,500 acres, San Joaquin followed closely with 9,100, and Lassen came third with 2,500.

HAY AND FORAGE CROP

The hay crop of California is one of its most valuable agricultural products. The census returns for the crop of 1909, a fair year, gave the yield at 4,327,130 tons, valued at \$42,187,215. These returns were as follows:

Crop	Farms reporting	Acres harvested	Quantity Tons	Value
Timothy alone	370	13,725	20,001	\$185,579
Timothy and clover mixed.....	958	46,661	73,183	629,575
Clover alone	703	8,519	20,380	213,289
Alfalfa	19,904	484,134	1,639,707	13,088,530
Millet or Hungarian grass.....	101	2,142	2,688	27,483
Other tame or cultivated grasses.....	2,274	90,414	119,415	1,253,428
Wild, salt or prairie grasses.....	3,679	253,127	281,033	2,028,494
Grains cut green	39,397	1,604,745	2,019,526	24,056,727
Coarse forage	2,175	25,868	60,611	438,095
Root forage	1,021	4,012	90,586	266,015
Total hay and forage, 1909.....	53,760	2,533,347	4,327,130	\$42,187,215
Hay (Crop Reporter), 1912.....		2,500,000	3,825,000	52,402,000
Hay (U. S. Farmers' Bulletin), 1913..		2,400,000	3,600,000	48,600,000
Hay (U. S. Year Book of Agric.) 1914.....		2,700,000	5,265,000	43,173,000

California grain cut in the milk is highly prized for hay and is sent East by the trainload for feeding race-horses.

Dairying and hog-raising in connection with alfalfa-growing is becoming one of the leading industries of the State, being one that is within reach of the man with comparatively small capital.

The State Board of Equalization reported 763,538 acres of standing alfalfa in 1914. The present production of alfalfa in California is about 1,500,000 tons. Lower prices have led to its increased use on the farm and to the introduction of mills for making alfalfa meal. The acreage is steadily increasing and five cuttings may be made yearly on irrigated ground, with an average of six tons per acre.

THE HOP INDUSTRY

The hop acreage in California, as in other parts of the United States, varies greatly from year to year; if a partial failure of the crop elsewhere sends the price skyward, the following year brings large plantings. Under normal conditions the acreage is fairly constant.

The last report of the State Board of Equalization gives the total acreage of hops in 1914 as 13,350, twelve counties being listed. The counties reporting the largest plantings were as follows: Sacramento, 4,100; Sonoma, 3,200; Mendocino, 2,400; Yuba, 1,200. Alameda, Butte, Lake, Shasta, Tehama and Yolo Counties reported more than one hundred but less than one thousand acres.

According to Mr. E. Clemens Horst, a leading hop expert of the Pacific Coast, the annual expense of growing and harvesting often runs as high as \$300 per acre. He estimates that the two hundred hop growers of the State pay \$2,000,000 for labor and \$1,000,000 for supplies. Great difficulty has been experienced in securing labor sufficient to pick the hops at the right time but this is being overcome by the introduction of machine-picking. One machine, with a crew of forty men and working ten hours a day, takes the place of a field crew of from 225 to 250 hand-pickers.



Courtesy of "California's Magazine"
TOWERING HOP VINES IN A CALIFORNIA FIELD

The principal fields are in the Sacramento Valley, where a failure has never been known and where the quality of the hops closely matches that of the New York and European varieties. The following tables show the extent of the industry:

Hop Production in California

Year	Bales	Pounds	Year	Bales	Pounds
1900.....	38,000	7,220,000	1908.....	63,200	11,692,000
1901.....	48,000	9,120,000	1909.....	69,688	12,892,280
1902.....	53,500	10,165,000	1910.....	71,511	13,229,535
1903.....	57,000	10,545,000	1911.....	93,981	17,367,985
1904.....	63,000	11,655,000	1912.....	117,770	21,198,600
1905.....	.....	13,135,000	1913.....	120,000	22,200,000
1906.....	108,000	20,000,000	1914.....	100,000	18,500,000
1907.....	90,000	16,650,000			

The Brewery Industry

Closely connected with the hop industry is the brewing of beer. This is a much larger industry than most people realize, representing an investment aggregating \$50,000,000. It supports about 20,000 people, 4,000 of whom are directly employed inside the breweries at high wages. The total paid in wages to these 4,000 amounts to about \$6,000,000 a year and their employment is permanent regardless of fluctuations in the market demand for the product.

There are about sixty breweries in the State, many of them small, and the annual production of beer is about 1,350,000 barrels. There are also three large malt houses in the State.

The California breweries use yearly 80,000,000 pounds of the choicest barley, with a value of \$1,600,000; they also use 1,350,000 pounds of hops annually. In addition they spend \$1,500,000 for cooperage, bottles, etc. The revenue paid to the United States government on beer alone amounts to about \$2,000,000 annually.

RICE IN CALIFORNIA

From experiments made in the Sacramento Valley during recent years, by rice experts of the Department of Agriculture, the adaptability of soil and climate to the successful culture of rice has been conclusively demonstrated, in the vicinity of Biggs especially. From one planting a yield of 3,000 pounds per acre was harvested. This rice was awarded the gold medal at the Seattle Exposition in 1909. Plantings made in 1910 justified the expectations of those interested, both as to yield and quality.

Commercial plantings really began in 1912, with 1,000 acres, yielding approximately 3,000,000 pounds. In 1913, 6,000 acres were planted with a yield of 19,200,000 pounds. The acreage of 1914 was 15,000 and the production was 50,000,000 pounds. The United States Department of Agriculture reports the value of the 1914 crop as \$800,000. It is expected that the production of 1915 will be twice as large. It is estimated that about 200,000 acres in California are suited to the production of rice. The ordinary yield per acre in the Sacramento Valley is about 2,000 pounds, although some growers report as much as 8,000 pounds per acre. The leading rice counties are Butte, Colusa, Yuba, Glenn and Yolo.

In Butte County it is estimated that the cost of growing the crop is \$21.55 per acre; cost of harvesting, threshing, etc., on a basis of 3,500 pounds per acre, is \$15.75; total cost of production, \$37.10 per acre. The value of the crop being estimated at \$70.00, the net profit is \$32.90 per acre.

The United States Department of Agriculture gave California fourth rank in the production of rice in the United States in 1914. The average yield per acre was 53 3/10 bushels while the nearest competitor produced an average of only 39 8/10.

COTTON IN SOUTHERN CALIFORNIA

The adaptability of the soil and climate of California to the growing of cotton has been known for some years. Of late, planting has been begun on a large scale and the acreage is increasing year by year.

In 1909 over 500 acres were planted in Imperial County, with seeds from Georgia and Texas. The result was most gratifying, an average of over one bale (500 pounds) to the acre being produced, some 600 bales in all, most of which found a ready market at the California Cotton Mills in Oakland. In 1910 some 12,000 acres were cultivated, producing 8,000 bales of excellent staple.

During the season of 1913, 26,000 acres were planted, with a production of 19,700 bales. The Bureau of the Census reports that 49,835 bales were ginned in California in 1914, including cotton grown on the Mexican side of Imperial Valley.

It is an interesting fact that California broke several cotton records during 1914. The earliest bale of cotton ever ginned in the United States was grown near Calexico and ginned on June 17th, three days earlier than the previous record held by Brownsville, Texas. The cotton was grown as the third crop on the same stalks. Seed taken from the record bale and planted on the same acre produced a second bale, ginned on October 15th of the same year.

The United States Department of Agriculture reported in February that both long and short staple cotton in California yielded 500 pounds to the acre. Missouri had the next best record, with 325 pounds of long staple and 295 of short staple per acre. The same authority reported California cotton as 100% perfect in quality. This is largely due to the fact that there is very little rain to stain the fibre nor is there any frost until the season is practically over. Therefore all kinds of California cotton bring a premium over the prevailing market price, on account of the beautiful whiteness of the product.

According to Mr. W. E. Packard, Agronomist in charge of the Imperial Valley Experiment Farm, commercial cotton growing is at present confined to Imperial County and a small acreage in the Palo Verde Valley of Riverside County. El Centro and Calexico are the chief cotton centers. However, it has been successfully grown in other counties and is adapted to many sections of the State where it is now unknown, provided a suitable supply of cheap and experienced labor can be developed.

Three principal varieties are now being raised. The short staple yields from three-fourths of a bale to two bales per acre, with a ginning percentage of about 33% and a selling price ranging from 8 to 14 cents per pound. The Durango (medium staple) yields from one-half to two bales an acre, has a ginning percentage of from 29% to 31%, and commands a price from 2 to 4 cents higher than the short staple. The Egyptian (long staple) has been successfully grown but labor and market conditions have discouraged its further extension.

One of the remarkable features about cotton growing in California is the fact that re-seeding is not necessary. If the rows are ridged up well at the last cultivation, to prevent the buds from freezing, a good stand of volunteer cotton is secured for the next crop.

The extent of the industry in the Imperial Valley has called for the installation of sixteen modern ginning machines, three cotton-seed oil mills and two compressors.

FLAX, HEMP AND RAMIE

The culture of these valuable textile plants has lately received an impetus in several localities which promise important developments. The soil in some places along the Sacramento and San Joaquin Rivers is suitable for producing a fine quality of hemp. The California Cotton Mills of Oakland buy nearly all the hemp grown in this State, which is manufactured into twine of various kinds, for all of which there is a market in the State.

It is even claimed that a better quality of hemp is being grown in California than anywhere else in the world. When properly handled after harvesting, it produces from 1,500 to 1,800 pounds per acre of long, clean, silky fibre, selling at from 15 to 18 cents per pound. It is one of the easiest of all crops to grow, requiring nothing except preparation of the soil and seeding; no cultivation is necessary. The harvesting is a simple matter and the machinery required for turning out a ton of fibre a day is not expensive and can be operated by two men. It is probably only a question of a short time until this important fibre industry will receive much more attention.

Considerable experimental work has been done in different parts of the State in the culture of ramie fibre. It has been successfully grown in both the San Joaquin and the Sacramento Valleys, but perhaps the largest plantation is to be found in Kern County in what is known as the Lerdo Colony. Here have been planted about 7,000 acres, the product of which finds a ready market in Germany. The stalks grow to a great size and the fibre is long and fine and of a firm texture, varying in length from two to seven inches. The great difficulty has been in perfecting machines for decortication, but during the past few years Mr. G. W. Schlichten, perhaps one of the greatest authorities on ramie fibre in the United States, has installed machines in his colony with which he is doing this work very successfully. The United States at the present time is importing \$89,000,000 worth of fibres and as there are many parts of the State where they can be successfully grown it is reasonable to say that there is a future for this industry.

THE BEET SUGAR INDUSTRY

It is almost forgotten now that the beet sugar industry of the United States originated in California, at Alvarado in Alameda County, which is still one of the seven leading beet sugar counties of the State.

The campaign of 1912-13 in California, with 1,612 acres, produced 980,894 tons of beets, with a sugar output of 155,432 tons of sugar, giving the State second place, next to Colorado. For the campaign of 1913-14 California produced, on 80,740 acres, 863,256 tons of beets, which yielded 132,621 short tons of sugar—according to the editor of "Sugar."

"The Agricultural Outlook," published by the United States Department of Agriculture, gives the following figures for the 1914-15 campaign in California: Acres harvested, 104,000; beets worked, 1,082,000 short tons; sugar produced, 168,792 short tons. These figures differ only slightly from those supplied by the Spreckels Sugar Company, the American Beet Sugar Company, and the Alameda Sugar Company, whose reports are compiled with great care.

The beet sugar factories operating in California during 1914, as reported by the Alameda Sugar Company, were as follows:

American Beet Sugar Co., Chino.	San Joaquin Valley Sugar Co., Visalia.
American Beet Sugar Co., Oxnard.	Santa Ana Co-Operative Sugar Co., Santa Ana.
Anaheim Sugar Co., Anaheim.	Southern California Sugar Co., Santa Ana.
Holly Sugar Co., Huntington Beach.	Union Sugar Co., Betteravia.
Los Alamitos Sugar Co., Los Alamitos.	

The plant at Spreckels, in Monterey County, is said to be the largest sugar beet factory in the world.

The total acreage in California sown to sugar beets in 1914 is reported by the State Board of Equalization as being 94,898. The leading counties were as follows: Orange, 25,250 acres; Monterey, 20,000; Ventura, 14,300; San Luis Obispo, 12,000.

An interesting item is the report of the American Beet Sugar Company, that it distributed in 1914 \$14,100,922.32 in the State of California, of which nearly one-half went to the farmers for beets, about one-fifth for labor in factories and fields, and the rest in freight and incidentals.

The growth of the industry in California is shown in the following exhibit for twenty-seven years, beginning with 1888, that being the first year statistics were obtained and published by the State Board of Trade:

Beet Sugar Production in California—Tons of 2,000 Pounds

Year	Tons	Year	Tons
1888.....	1,910	1902.....	73,761
1889.....	2,457	1903.....	65,360
1890.....	3,351	1904.....	59,147
1891.....	5,224	1905.....	64,251
1892.....	10,761	1906.....	94,285
1893.....	17,420	1907.....	72,889
1894.....	18,615	1908.....	99,613
1895.....	23,827	1909.....	126,621
1896.....	31,815	1910.....	144,747
1897.....	35,280	1911.....	162,533
1898.....	18,086	1912.....	155,432
1899.....	42,100	1913.....	169,258
1900.....	30,319	1914.....	168,792
1901.....	68,700		

CALIFORNIA TOBACCO

Success in the commercial production of tobacco under the exceptional climatic conditions of California has hitherto awaited new methods of curing, and it is now claimed that these have been evolved. The following summary of the possibilities expresses the convictions of Mr. J. D. Culp, who has been growing tobacco in the State since 1858 and who is the author of "Tobacco in California," as well as the inventor of new processes of curing it:

There is not a county in this State where some variety of tobacco cannot be successfully grown. The soils and localities suitable for the production of chewing or pipe-smoking tobacco are very much greater in extent than the soils and localities suited to the production of Havana wrappers, and some farmers are going to become suddenly rich when they have demonstrated that their localities and soils are well adapted to the growing of Havana wrappers.

During the fifty-six years I have been growing tobacco, nothing has happened that would damage a crop in any way, and the grower does not need to insure his crop against hail or frost; nor are there any destructive winds or heavy rains to damage it. Consequently, tobacco can be produced in California for one-half the cost of production in any State of the Union. Furthermore the climate permits of a long harvest season, and a new crop can be put in while the mature crop is being gathered and cured. Besides, California is the only place in the world where Havana tobacco has been produced that would compete with Havana tobacco grown in Cuba.

I have had the ambition for a good many years to produce in California a tobacco for five-cent cigars that would be better than any other American-grown tobacco. I have been successful in doing this and have produced six different types of tobacco, each of which will make a much better five-cent cigar than has ever been manufactured from any American-grown tobacco. This fact promises much for the future of the industry in California.

The growing of Turkish tobacco has had a set-back, owing to the refusal last year of a leading cigarette manufacturer to continue to buy the crop. It had been found that the tobacco was too rank and strong for satisfactory working. If the growers of that Turkish tobacco had known how to do it, they could have grown it as mild as they wished.

The experiments with Turkish tobacco were made mainly in Tulare and adjacent counties. The production rose rapidly from 7,000 pounds in 1911 to 600,000 pounds in 1913. Of this variety, about 150,000 pounds remained in storage at Fresno during the early part of 1914 but it eventually found a market at Los Angeles.

CALIFORNIA DATES

Mr. W. J. Paul, of the Coachella Valley Date Growers' Association, reports that the production of dates in California in 1914 was about 20,000 pounds. They found a ready market at the standard price of \$1 per pound. The Deglet Noor palms often have a production of from 100 to 150 pounds per tree. The quality of the fruit and its sugar content surpass the same variety grown in its original home in the oases of the Sahara. All the fruit in this valley matures and has a pure sugar content ranging from 54% to 70%, which keeps the fruit indefinitely. The California Development Board has a box of dates from which the seeds were removed and planted two years ago, but the dates are yet in excellent condition, without having been processed.

There were 600 imported date palms in full bearing in 1914, 200 others under six years old, and 28,387 non-bearing palms. Of seedling dates there were 2,550 palms in bearing and 501,000 non-bearing.

HONEY IN CALIFORNIA

While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the San Joaquin Valley and the counties south.

The total honey crop for the State for 1914 (as reported by the California State Bee Keepers Association) was 450 carloads of extracted honey, or a total of 13,500,000 pounds. This was about fifty carloads short of expectation. The price was forced down by the European war and ranged from 4¢ to 7¢ per pound in carload lots. Taking 6¢ as an average, the total valuation of the extracted honey was \$810,000.

The production of comb honey, which is much neglected in California, was only about 18% of the total yield, but the price averaged about 11¢ per pound in carloads for good white grades. Since the State imports many carloads from the Rocky Mountain States every year, there is a large and inviting field for the production of more comb honey.

The total yield of beeswax was about 500,000 pounds, valued at \$150,000. The total of all the honey products of the State for 1914 is placed at \$1,222,000.

There are said to be 6,000 bee-keepers in the State, with 600,000 colonies of bees. The United States Bureau of Crop Estimates reports that the average yield per colony in California was 75 pounds in 1914 and only 36 pounds in 1913. A prominent bee expert in California estimates that 99% of the available honey is lost, owing to the lack of bees to gather it from the 740,000 acres of fruit blossoms, and an alfalfa acreage equally large.

Estimates of the Honey Production

Year	Pounds	Year	Pounds
1899.....	2,822,000	1907.....	8,700,000
1900.....	2,208,000	1908.....	5,250,000
1901.....	8,112,000	1909.....	11,532,000
1902.....	5,125,000	1910.....	4,080,000
1903.....	8,400,000	1911.....	9,500,000
1904.....	7,000,000	1912.....	4,710,000
1905.....	9,500,000	1913.....	3,720,000
1906.....	5,250,000	1914.....	13,500,000

SILK

The raising of silk worms, which attracts some attention, is increasing slowly in California, and is not yet on a commercial basis. The climate of California is admitted to be adapted to the raising of silk. The season for production extends over a period of six to eight months, while in Europe it lasts only as many weeks.

The matter of labor is all that prevents this from being an important industry.

THE MINERAL INDUSTRY

The value of California's mineral product in 1914 showed a slight decline over the preceding year, but the record for the six years ending December 31, 1914, shows that the production has been steadily rising in value. The figures are supplied by the State Mining Bureau, through the courtesy of Mr. F. McN. Hamilton, State Mineralogist.

Total Value of Mineral Output

1909.....	\$82,972,209	1912.....	\$91,472,385
1910.....	88,419,079	1913.....	98,644,639
1911.....	87,497,879	1914.....	93,709,630

The Mineral Industry in California, 1913-14

(State Mining Bureau.)

Substance	1913	1914
Asbestos	\$1,175	\$125
Barytes	3,680	3,000
Bituminous rock	78,479	166,618
Borax	1,491,530	1,483,500
Brick	2,915,350	2,288,227
Cement	7,743,024	6,558,148
Chromite	12,700	4,884
Clay	261,273	167,552
Coal	85,809	28,806
Copper	5,343,023	4,055,375
Feldspar	7,850	16,565
Fuller's earth	3,700	5,928
Gems	13,740	3,970
Gold	20,406,958	21,078,700
Graphite	25	.....
Gypsum	135,050	78,375
Infusorial earth	35,968	80,350
Iron ore	4,485	5,128
Lead	160,202	183,198
Lime	528,547	378,663
Limestone	274,455	517,713
Magnesite	77,056	76,246
Manganese . . . . .	.....	1,500
Marble	113,282	48,832
Mineral paint	1,780	847
Mineral water	599,748	476,169
Natural gas	1,053,292	1,049,470
Petroleum	48,578,014	47,487,109
Platinum	17,738	18,056
Potash . . . . .	.....	460
Pumice stone	4,500	1,000
Pyrites	218,537	230,058
Quartz	7,756	4,800
Quicksilver	630,042	481,731
Salt	462,681	583,553
Sand, fire, etc.	14,143	17,838
Sandstone	27,870	45,322
Silver	832,553	939,555
Soapstone	6,150	4,500
Soda	24,936	115,396
Stone, miscellaneous	6,168,020	4,821,357
Tungsten ore	234,673	180,575
Zinc	64,845	20,381
Total	\$98,644,639	\$93,709,630

PETROLEUM IN CALIFORNIA

The output of petroleum in California continues to steadily increase, as will be seen by the following table. The California figures are supplied by the State Mining Bureau, while the production of the United States is taken from the report of the United States Geological Survey:

Year	California (barrels)	United States (barrels)	Year	California (barrels)	United States (barrels)
1900	4,329,950	63,620,529	1908	48,306,910	178,527,355
1901	7,710,315	69,389,194	1909	58,191,723	183,170,874
1902	14,356,910	88,766,916	1910	77,697,568	209,556,048
1903	24,340,839	100,461,337	1911	84,648,157	217,000,000
1904	29,736,003	117,080,960	1912	89,689,250	222,935,044
1905	34,275,701	134,717,580	1913	98,494,532	248,446,230
1906	32,624,000	126,493,936	1914	102,881,907	.....
1907	40,311,171	166,095,335			

The value of the production of 1914, in California alone, was approximately \$47,487,109. Since the first production of oil in California in 1875, the State has produced petroleum to the enormous total of 762,489,115 barrels. The value of the output since 1887 is estimated at \$352,868,325.

California holds first rank among the States of the Union in the production of petroleum. The following table shows the production in the six principal producing States:

State	Production by barrels	
	1912	1913
California	87,272,593	97,788,525
Oklahoma	51,427,071	63,579,384
Illinois	28,601,308	23,893,899
Texas	11,735,057	15,009,478
Louisiana	9,263,439	12,498,828
West Virginia	12,128,962	11,567,299
Total production for the United States	1912—	222,935,044
Total production for the United States	1913—	248,446,230
Total value for the United States	1912—	\$164,213,247
Total value for the United States	1913—	237,121,388

The following tables, showing the production by counties and by fields, are supplied by the State Mining Bureau:

Production and Value of Oil by Counties

County	1913	1913	1914	1914
	Bbls.	Value	Bbls.	Value
Fresno	18,956,965	\$7,927,736	15,952,190	\$7,210,389
Kern	58,698,432	27,038,474	65,332,633	26,721,046
Los Angeles	4,143,690	2,672,680	3,558,690	1,957,279
Orange	9,485,362	6,867,402	12,758,678	8,612,108
Santa Barbara	6,291,076	3,151,725	4,325,787	1,989,862
Santa Clara	20,000	12,000	10,000	5,300
Ventura	899,007	907,997	943,929	991,125
Totals	98,494,532	\$48,578,014	102,881,907	\$47,487,109

Production by Fields

(Barrels 42 gallons)

Field	1913	1914	Inc. + Dec.—
Kern River	10,499,509	7,227,422	3,222,087—
McKittrick	4,520,549	3,871,352	649,297—
Midway-Sunset	39,277,370	49,408,493	10,131,123+
Lost Hills-Belridge	5,272,630	4,825,366	447,264—
Coalinga	18,696,110	15,952,190	2,743,920—
Santa Maria-Lompoc	4,843,683	4,266,387	577,296—
Ventura Co., Newhall	1,009,633	943,929	65,704—
Los Angeles-Salt Lake	2,942,684	2,456,937	485,747—
Whittier-Fullerton	10,685,146	13,860,431	3,175,285+
Summerland	59,400	59,400	—
Watsonville	20,000	10,000	10,000—
Total	*97,776,714	102,881,907	5,105,193+

*Total used by Bureau last year, 98,494,532 bbl.

Pipe Lines

A vast system of pipe lines has been constructed to take care of California's great petroleum industry. The following interesting figures are from Bulletin 69, of the State Mining Bureau, which covers the petroleum industry in detail:

The Standard Oil Company has 464 miles of pipe, serving the San Joaquin Valley, Los Angeles and Orange Counties, Ventura County and Santa Barbara County. The daily capacity of the total mileage is 226,400 barrels. The Producers' Trans-

portation Company, operating in the San Joaquin Valley, has 221 miles of line, with a capacity of about 75,000 barrels a day. The Union Oil Company has 51 miles in Santa Barbara, Ventura, Los Angeles and Orange Counties; capacity not given. The Associated Pipe Line Company, carrying San Joaquin Valley oil, has a mileage of 559 and a capacity of 46,000 barrels daily. The Associated Oil Company, operating from Coalinga to Monterey and from Santa Maria to Gaviota, has 165 miles, with a daily capacity of 38,000 barrels. The Amalgamated Oil Company has 6.5 miles, with a capacity of 9,000 barrels. It delivers at Los Angeles. The General Pipe Line Company can deliver at Los Angeles and Mojave approximately 45,000 barrels a day through its 208 miles of pipe.

THE FORESTS OF CALIFORNIA

The annual timber output of the State is approximately 1,200,000,000 board feet, almost evenly divided between redwood and pine. In connection with the other Pacific States, it supplies almost one-half of the raw material for the wood manufacturing industries of the nation. California mills are steadily increasing their own output of finished products and are utilizing trees and the rough lumber more completely. Nearly 50 per cent of the product of pine is worked into boxes and box shooks at the saw-mills.

Lumber Cut in California for Years from 1880 to 1914

(From Government Report)

	Feet		Feet
1880.....	304,795,000	1908.....	966,115,000
1890.....	515,823,000	1909.....	1,144,000,000
1900.....	734,232,000	1910.....	1,254,826,000
1905.....	1,077,499,000	1911.....	1,207,000,000
1906.....	1,348,599,000	1912.....	1,203,059,000
1907.....	1,345,943,000	1913.....	1,183,380,000
		1914.....	1,185,000,000

Kinds of Lumber Cut in California

(Quantities approximated)

Kinds	1910 Feet	1914 Feet
Redwood.....	600,000,000	425,000,000
Western pine or white.....	350,000,000	450,000,000
Douglas fir.....	110,000,000	50,000,000
Sugar pine.....	100,000,000	150,000,000
White fir.....	60,000,000	75,000,000
Spruce.....	30,000,000	10,000,000
Cedar.....	15,000,000	20,000,000
Western hemlock.....	1,000,000	1,000,000
Oak.....	1,000,000	1,000,000
Ash and other.....	3,000,000	3,000,000
	1,270,000,000	1,185,000,000

Receipts of Lumber at San Francisco in 1914

Year	California	Ore. and Wash.	Rail	Total
1913.....	303,872,000	721,154,000	20,885,000	1,045,911,000
1912.....	340,257,000	652,307,000	22,143,000	1,014,707,000
1911.....	324,251,000	634,251,000		958,502,000
1910.....	332,499,000	675,145,000		1,007,594,000
1909.....	324,913,000	651,469,000		976,382,000
1908.....	298,780,000	582,524,000		881,304,000

California Redwood

It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "clear lumber." The redwood (*Sequoia sempervirens*) is indigenous to California, and except for a few stunted trees in



A TRAIN-LOAD OF CALIFORNIA PINE—MT. SHASTA IN THE BACKGROUND

Japan is found in no other country. The trees of the Sequoia family are the oldest and largest known. The wood takes a distinct and beautiful finish, which makes it valuable for interior use of all kinds. Being free of resin, it is especially resistant to fires and decay, making it especially valuable for siding, shingles and wherever exposed to moisture.

The redwood belt extends from the California-Oregon line southerly along the coast about 240 miles, a narrow belt 10 to 30 miles wide; on the west is the Pacific Ocean and on the east the divide of the low Coast Range.

Annual Shipments of Redwood

The following figures taken from the "Lumber Record Bureau" give the annual shipments of redwood from the California mills north of San Francisco Bay:

	Feet		Feet
1900.....	209,001,922	1907.....	437,514,653
1901.....	244,386,075	1908.....	356,549,880
1902.....	262,597,015	1909.....	402,519,307
1903.....	301,343,953	1910.....	446,097,661
1904.....	324,676,960	1911.....	444,925,773
1905.....	347,679,159	1912.....	477,330,460
1906.....	409,702,576	1913.....	404,583,279
		1914.....	430,520,000

To the above cut should be added approximately 100,000,000 feet going into shingles, shakes, split ties, posts, pickets, etc., and at least 25,000,000 feet manufactured south of San Francisco.

The redwood shipments from Humboldt, Del Norte and Mendocino Counties for the calendar year 1914 were reported by another authority as being 430,520,000 feet. The greater part of this was shipped to California points, the rest going to Mexico, Central and South America, the Hawaiian Islands, Australia and other points. The mills which produced the above amount of redwood also shipped, during 1914, 58,249,000 feet of fir, all of which was consumed in California.

The redwood is peculiarly the poor man's timber and with a few tools he can make a living while clearing his land. Owing to its straight grain and easy splitting qualities, expensive saw-mills and logging outfits are not necessary to putting the timber into marketable condition.

A falling axe, wedges and broad-axe enable the individual worker to fall and work the great trees into ties, posts, shakes, pickets and grape stakes, all of which products find a ready market at remunerative prices at the nearest shipping point.

Another product of the so-called redwood belt is the bark from tan oak, of which about 30,000 cords are peeled annually, with a value of from \$450,000 to \$600,000 at the shipping point.

California Pine

The Sierra Nevada Mountains are the home of the pine. The pine forests of California extend from Kern County 350 miles to the northern boundary of the State in the Sierra Nevada Mountains, with an average width of perhaps twenty miles, and from Napa County to the northern boundary of the State on the eastern slope of the Coast Range. There are also small areas in the San Bernardino Mountains.

The total area of merchantable pine timber is approximately 8,000 square miles. The most valuable trees are the sugar pine (*Pinus lambertiana*), the white pine (*Pinus ponderosa*) and the Jeffrey pine. Other valuable trees which occur in these forests are Douglas fir, white fir, spruce, cedar and Western hemlock.

The woods from these trees are meeting with a steadily increasing demand in the wood manufacturing industries of this country and the entire world. They are unsurpassed for doors, sashes, interior finish, flooring, ceiling, patterns, piano key boards, lead pencils and for many other purposes where strength, durability, stability, ease in working and beauty of finish are required.

There are many great plants in all parts of the State. The great railroad lines carry their product to every part of the United States. The work of lumbering is practically the same as in the redwood districts, steam machinery as a rule getting the logs to the mills, although in some instances ox-teams are still used. Here, as in the redwood country, there are immense log ponds where the logs are stored away for the mills. The cut has run from 400,000,000 to 500,000,000 feet a year.

Complete statistics are not now available, but the leading company handling the five upper grades of sugar and white pine estimates that 100,000,000 feet of this class of lumber is annually shipped to the East and South.

Saw-Mills

According to the official and most reliable lumber authorities, there are about 650 saw-mills scattered through the timber sections of the State. These saw-mills employ over 25,000 men, and pay over \$16,000,000 in wages. They expend over \$18,000,000 for materials, \$6,000,000 for supplies, and \$2,000,000 for taxes.

The total value of the products was \$45,000,000, which was nearly 50 per cent greater than the output of the canning and preserving industry, the next greatest manufacturing industry.

National Forests in California

According to District Forester DuBois, who is charged with the administration of all the National Forest Reserves in the State, these forests comprise one-third of the timber of the State and have an estimated value of \$250,000,000. (The National Forests do not include the National Parks.) They have an estimated stand of 100,000,000,000 feet of marketable timber—chiefly pine, fir and cedar. About 60,000,000 feet a year is being cut and more could be advantageously turned into lumber.

The Federal government expends about \$770,000 annually in administering the 18 National Forests of the State, which comprise 20,555,680 acres of government land.

In the year ending June 30, 1914, the National Forests in California furnished 57,000,000 feet of timber; provided forage for 189,451 head of cattle and horses, and 433,058 head of sheep and goats; developed 70,221 hydro-electric horse-power; and yielded a rental of \$16,258 for 3,599 special uses of various kinds.

Forest Protection

It has been expertly estimated that California now has at least 381,000,000,000 feet of standing timber; valued at \$3 per thousand feet, it is worth \$1,143,000,000. At least 14 per cent of all the remaining soft wood timber in the United States is standing in the redwood and pine forests of California. With the available supply in other parts of the country rapidly diminishing, it is of the utmost importance that the forests of California should be fully safeguarded. This is also of the highest importance because of the relation of the forests to the great irrigation and hydro-electric interests.

The forests of California will be of greatest value if cut and used in accordance with the demand for lumber. Cutting from any other cause is forced and causes waste of all kinds in the woods, at the mills and in marketing. Under such methods less than 40 per cent of the timber is saved, while forests cut in accordance with the demand for lumber yield as high as 80 per cent of the timber in the trees. In other words, the returns are doubled. The causes of forced cutting are carrying costs, such as taxes, interest and fire-protection.

Two thirds of the timber land in California, 10,000,000 acres, is owned by the government, and one-third, or 5,000,000 acres, by private owners. This condition of ownership will always operate to prevent any monopolistic control. The government and private owners co-operate in protecting the forests from fire. That this protection is effective is shown by the fact that less than 15,000 acres were burned over during 1914.

Great credit is due both the Federal and the State authorities for the vigorous manner in which they are protecting all the forests as well as the great National Reserves.

MANUFACTURING

(U. S. Census Report, 1910)

Summary for the State, 1909

	Census, 1909	Per cent of increase 1904-1909
Number of establishments.....	7,659	12
Capital.....	\$537,134,000	90
Cost of materials used.....	\$325,238,000	51
Salaries and wages.....	\$107,097,000	35
Miscellaneous expenses.....	\$ 43,819,000	61
Value of products.....	\$529,761,000	44
Value added by manufacture (products less cost of materials).....	\$204,323,000	35
Employees—		
Number of salaried officials and clerks.....	18,203	48
Average number of wage earners employed during the year.....	115,296	15
Primary horsepower.....	329,100	56

Following are tables compiled to show the growth of manufacturing between 1850 and 1909:

Capital Invested**Value of Products**

Year	Amount	Increase over previous decade	Year	Amount	Increase over previous decade
1850.....	\$1,006,197	.....	1850.....	\$12,862,522	.....
1860.....	22,043,096	2097.7	1860.....	68,253,228	430.6
1870.....	39,728,202	80.2	1870.....	66,549,566	—2.4
1880.....	61,243,784	54.2	1880.....	116,218,973	74.5
1890.....	146,797,102	139.7	1890.....	213,403,996	83.6
1900.....	205,395,025	39.9	1900.....	302,874,761	41.9
1909.....	537,134,000	161.5	1909.....	529,761,000	74.8

	San Francisco		Los Angeles		Oakland		Sacramento	
	Census 1909	Per cent incr'se 1904-'09	Census 1909	Per cent incr'se 1904-'09	Census 1909	Per cent incr'se 1904-'09	Census 1909	Per cent incr'se 1904-'09
Number of establishments.....	1,795	—20	1,325	63	441	78	211	35
Capital.....	\$133,760,000	31	\$59,518,000	111	\$19,113,000	109	\$10,097,000	37
Cost of materials used.....	76,175,000	*	38,913,000	108	11,847,000	175	6,893,000	34
Salaries and wages.....	30,452,000	—4	16,500,000	82	6,618,000	167	4,534,000	34
Miscel. expenses.....	13,053,000	5	5,649,000	106	2,094,000	145	1,356,000	77
Value of products.....	132,929,000	—4	68,586,000	97	22,343,000	148	13,977,000	29
Value added by manufacture (products less cost of materials).....	56,754,000	—8	29,673,000	84	10,496,000	123	7,084,000	44
Employees:								
Number of salaried officials and clerks.....	6,116	18	3,367	68	1,079	177	533	42
Average number of wage earners employed during year.....	28,239	—27	17,327	66	6,905	106	4,514	7

—Decrease.

*Less than one per cent increase.

Other Principal Manufacturing Points

	Fresno	Stockton	San Jose	Richmond	San Diego	Eureka
Establishments.....	76	144	153	25	117	48
Capital.....	\$4,933,000	\$3,250,000	\$3,815,000	\$14,550,000	\$5,328,000	\$3,306,000
Salaries and wages.....	\$1,431,000	\$1,681,000	\$1,152,000	\$2,760,000	\$1,069,000	797,000
Wage earners.....	1,936	1,594	1,430	3,420	1,071	946
Value of output.....	\$11,090,000	\$11,849,000	\$5,610,000	\$11,250,000	\$4,741,000	\$3,012,000

NOTE—Pending the next taking of the Manufacturing Census by the Government, it is safe to estimate that the above figures have increased from 15 to 25 per cent.

CALIFORNIA'S WATER-POWER RESOURCES

Closely connected with the future of manufacturing development are the fuel and the water-power supply capable of being converted into electrical power. The statistics of the State's wonderful oil production, given on a preceding page, show the abundance of cheap fuel. The following extract from Water Supply Paper No. 234, in the report of the U. S. Geological Survey, shows that the development of hydro-electric power has only begun.

California's Water Power, 1909

Developed			Undeveloped		
Source	Wheels	Horse-power		Minimum	Maximum Development
Sacramento River.....	576	280,735	Sacramento River	2,420,000	4,580,000
San Joaquin River	159	86,224	San Joaquin River (including Tulare Lake drainage)	759,000	3,140,000
Minor streams, southern...	74	50,183	Minor streams, northern	600,000	1,200,000
Minor streams, northern...	176	25,440	Sierra Nevada drainage	132,000	202,000
Sierra Nevada drainage....	74	17,737	Minor streams, southern	36,400	88,300
San Francisco Bay.....	11	6,455	Totals	3,947,000	9,210,300
Totals	1,070	466,774			

It is calculated that the hydro-electric development since that date has raised the aggregate to 584,511 horse-power. The steam-electric plants are estimated at 355,525 horse-power—less than a million horse-power in all.

The following table, compiled from data supplied by Mr. F. F. Fowler, District Engineer of the U. S. Forest Service, illustrates the speed of recent development:

Hydro-Electric Plants in California

Year	No. of Plants	K. W.	Capacity equal H. P.	Year	No. of Plants	K. W.	Capacity equal H. P.
1892.....	1	480	643	1904.....	41	88,465	118,586
1893.....	2	1,230	1,649	1905.....	50	100,115	134,216
1894.....	2	1,230	1,649	1906.....	54	122,265	163,894
1895.....	4	5,730	7,681	1907.....	58	161,465	216,441
1896.....	7	8,190	10,978	1908.....	67	238,985	320,355
1897.....	9	12,440	10,978	1909.....	69	248,285	332,808
1898.....	15	20,715	27,768	1910.....	71	293,095	392,889
1899.....	19	27,175	36,427	1911.....	71	298,595	400,261
1900.....	20	28,695	38,478	1912.....	72	308,295	413,264
1901.....	23	38,015	50,958	1913.....	78	420,045	563,063
1902.....	27	51,565	69,122	1914.....	79	436,045	584,511
1903.....	33	65,075	67,232				

The following is taken from an address delivered by Mr. John A. Britton, who is a leading authority on this subject:

The State of California can claim the honor of having been pioneer in hydro-electric development. The first plant operated in the State followed closely the first one operated in the world, which was at Frankfort-on-the-Main in 1894, and the first commercial hydro-electric high-tension transmission in the State was the plant erected in the town of Folsom and supplying the city of Sacramento; this occurred in the year 1895. The voltage of the line was 11,000; the fall of water 56 feet. Today developments are in operation carrying on lines as high as 150,000 volts, and operating at heads of over 2,000 feet, or at a pressure of approximately 875 pounds per square inch.

California has not hitherto been classed among the States in which manufactures was a leading industry, but with abundant oil for fuel for manufacturing power and motive-power on the one side, and with 9,000,000 horse-power in water-power maximum development and a widening of markets both at home and in the Orient, California can face its industrial future with confidence.

California Hydro-Electric Plants in Operation

(On December 5, 1914)

Company	No. of plants	Date of first Installation	Total installed capacity KVA
California-Oregon Power Co.....	7	1903	10,600
Pacific Gas & Electric Co.....	9	1895	92,370
Northern California Power Co., Consolidated	7	1901	31,350
Sierra & San Francisco Power Co.....	3	1898	37,375
Coast Valleys Gas & Electric Co.....			
Great Western Power Co.....	2	1908	40,800
Western States Gas & Electric Co.....	2	1903	4,500
Oro Electric Corporation.....	2	1906	3,000
Snow Mountain Water & Power Co.....	1	1908	6,500
Coast Counties Gas & Electric Co.....	1	1896	810
Tuolumne Electric Co.....	1	1908	600
Utica Gold Mining & Hobart Estate Co.'s....	1	1898	1,500
Mariposa Mining & Commercial Co.....	1	1905	400
San Joaquin Light & Power Corp.....	4	1897	25,350
Mt. Whitney Power & Electric Co.....	4	1899	8,350
Yosemite Power Co.....	1	1906	900
Pacific Light & Power Corp.....	8	1898	84,350
Southern California Edison Co.....	7	1893	28,500
Ontario Power Co.....	1	1902	750
Holton Power Co.....	2	1906	950
Los Angeles Aqueduct Power.....	3	1908	2,220
Sierra Pacific Electric Co.....	5	1899	8,700
Nevada-California Power Co.....	5	1905	22,250
Southern Sierras Power Co.....			
Pacific Power Co.....	1	1905	3,000

Total Mean Annual Flow of California Streams in Acre-Feet

(Data supplied by U. S. Geological Survey, from Supply Papers and unpublished records)

Name of stream	Station	Years of record	Run-off in acre-feet
Sacramento River	near Red Bluff	18	9,770,000
Pit River	near Bieber	4	589,000
McCloud River	near Gregory	5	1,840,000
Stony Creek	near Fruto	11	549,000
Feather River	at Oroville	10	5,880,000
Yuba River	near Smartsville	9	3,050,000
Bear River	at Van Trent	9	364,000
American River	at Fair Oaks	7	3,820,000
Cache Creek	at Yolo	10	569,000
San Joaquin River	near Friant	6	1,930,000
Kern River	near Bakersfield	18	724,000
Tule River	near Portersville	11	137,000
Kaweah River	near Three Rivers.....	9	506,000
Kings River	near Sanger	18	1,940,000
Merced River	near Merced Falls	11	1,250,000
Tuolumne River	near LaGrange	18	2,070,000
Stanislaus River	at Knights Ferry	10	1,540,000
Calaveras River	at Jenny Lind	4	351,000
Mokelumne River	near Clements	8	988,000
Cosumnes River	at Michigan Bar	6	398,000
Truckee River	at Nev-Cal. State Line.....	13	798,000
West Fork Carson River.....	at Woodfords	11	121,000
East Fork Carson River.....	near Gardnerville, Nevada.....	6	335,000
West Walker River.....	near Coleville	6	293,000
Owens River	near Lone Pine.....	4	305,000
Sweetwater River	near Descanso	6	7,900
Santa Ysabel Creek.....	near Escondido	5	28,800
Santa Ana River*.....	near Mentone	10	75,500
San Gabriel River*.....	near Azusa	17	112,000
Arroyo Seco	near Soledad	11	147,000
Colorado River	at Yuma, Arizona	11	16,900,000
Link River	at Klamath Falls, Ore.....	9	1,700,000

*Includes canals.

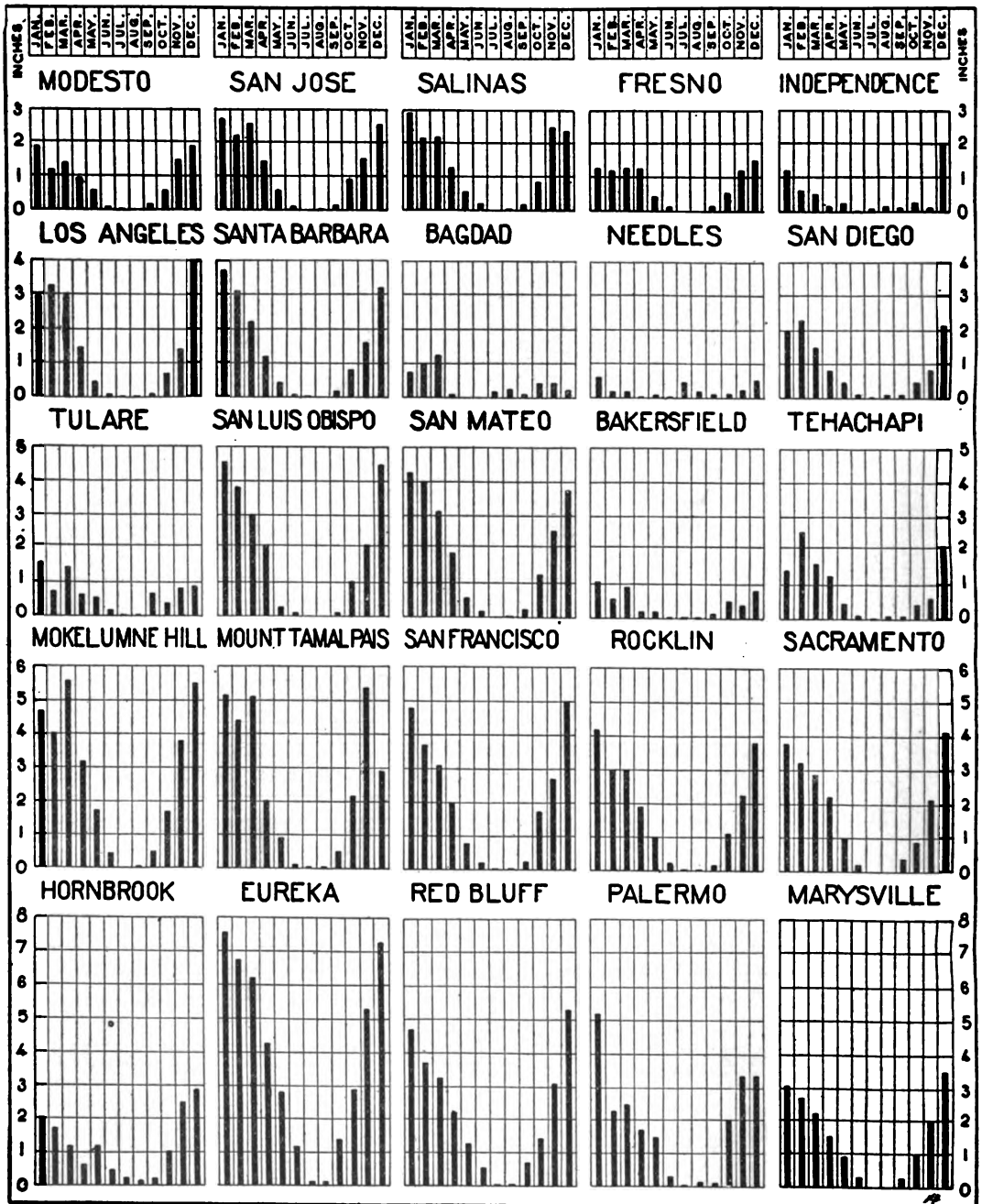
CLIMATOLOGICAL DATA FOR 1914

(Table from Annual Summary, California Section, Weather Bureau Record, 1914, by George H. Wilson, Forecaster)

Stations	Counties	Eleva- tion feet	Temperature Degrees Fahrenheit		Precipitation inches		Rainy days	Sky		Type of Country		
			Annual Mean	High- est	Low- est	Total for year		Total snow- fall	Clear days		Partly cloudy days	Cloudy days
Independence	Inyo	3907	55.7	101	3	9.30	T	29	223	97	45	Mountain and high plateau
Hornbrook	Siiskiyou	2154	52.5	101	15	10.96	7.0	35	163	121	81	Mountain and high plateau
Alturas	Modoc	4460	48.9	102	-9	8.88	22.2	77	185	117	63	Mountain and high plateau
Dunsmuir	Siiskiyou	2285	55.0	104	18	57.17	59.4	95				Mountain and high plateau
Quincy	Plumas	3400	51.0	98	0	40.45	60.0	65				Mountain and high plateau
Summit	Placer	7017	42.2	84	2	41.87	361.5	70	223	31	121	Mountain and high plateau
Tamarack	Alpine	8000	37.4	85	-22	44.51	286.0	88	188	98	79	Mountain and high plateau
Yosemite	Mariposa	3945	51.6	110	0	32.83	90.5	71	261	38	66	Mountain and high plateau
Redding	Shasta	552	52.1	109	21	48.37	7.0	78				Sacramento and San Joaquin valleys
Red Bluff	Tehama	307	62.4	108	28	27.51	0	63	209	72	84	Sacramento and San Joaquin valleys
Oroville (B. R.)	Glenn	254	62.5	111	27	21.55	0	63	243	73	49	Sacramento and San Joaquin valleys
Colusa (B. R.)	Colusa	60		104	28		0					Sacramento and San Joaquin valleys
Sacramento	Sacramento	71	59.8	102	30	16.05	0	59	263	45	57	Sacramento and San Joaquin valleys
Stockton (S. H.)	San Joaquin	23	59.9	102	30	16.25	0	54	251	70	44	Sacramento and San Joaquin valleys
Merced	Merced	173	62.1	106	26	14.72	0	44	264	41	60	Sacramento and San Joaquin valleys
Fresno	Fresno	293	63.6	106	27	9.67	0	43	213	85	67	Sacramento and San Joaquin valleys
Bakersfield	Kern	404	64.5	108	24	6.50	0	25	302	23	40	Sacramento and San Joaquin valleys
Oroville (near)	Butte	250	62.1	109	29	26.24	0	49	209	36	120	Foothills Sacra. and San Joaquin valleys
Nevada City	Nevada	2850	55.9	100	19	48.10	9.0	73	223	75	67	Foothills Sacra. and San Joaquin valleys
Rocklin	Placer	249	60.4	106	25	28.54	0	50	233	29	103	Foothills Sacra. and San Joaquin valleys
Placerville	El Dorado	1875	55.7	98	24	42.45	4.0	68				Foothills Sacra. and San Joaquin valleys
Jamestown	Tuolumne	1471	57.8	102	20	38.74	3.0	52	229	45	91	Foothills Sacra. and San Joaquin valleys
Lemon Cove (B. R.)	Tulare	600		113	28		0					Foothills Sacra. and San Joaquin valleys
Reedley	Fresno	347	62.4	103	29	10.46	0	24	297	0	68	Foothills Sacra. and San Joaquin valleys
Caliente	Kern	1200	63.8	106	30	10.47	0	19	246	44	115	Foothills Sacra. and San Joaquin valleys
Eureka	Humboldt	64	51.6	78	32	37.91	0	135	82	107	176	Sea coast
Point Reyes	Marin	490	53.2	88	37	19.68	0	83	109	92	164	Sea coast
San Francisco	San Francisco	207	56.7	92	41	24.04	0	68	152	122	91	Sea coast
Monterey	Monterey	15	58.0	80	30	22.74	0	44	265	66	34	Sea coast
Santa Barbara	Santa Barbara	180	59.3	98	35	29.64	0	54	255	63	47	Sea coast
San Diego	San Diego	87	62.0	90	39	10.90	0	48	201	101	62	Sea coast
Los Angeles	Los Angeles	283	63.2	97	40	23.21	0	41	172	106	87	Southern California
Riverside	Riverside	851	64.5	104	30	16.54	0	51	226	100	39	Southern California
Escondido	San Diego	657	62.1	102	28	20.60	0	43	87	243	35	Southern California
Redlands	San Bernardino	1352	62.9	102	29	19.31	0	50	200	36	129	Southern California
Santa Rosa	Sonoma	181	55.8	100	24	34.62	0	66	173	36	156	West of Coast Range
Mt. Tamalpais	Marin	2375	54.9	91	29	24.93	6.0	66	200	36	156	West of Coast Range
Lick Observatory	Santa Clara	4209	52.8	90	24	32.74	40.5	79	212	75	78	West of Coast Range
San Jose	Santa Clara	95	58.0	95	29	17.75	0	63	228	62	75	West of Coast Range
Hollister	San Benito	284	56.8	98	32	17.38	0	65	225	77	63	West of Coast Range
Los Gatos	Santa Clara	600	58.7	102	28	45.65	0	66	226	70	69	West of Coast Range
Paso Robles	San Luis Obispo	900	61.0	108	27	21.89	0	65	241	35	89	West of Coast Range
Ojai Valley	Ventura	900	62.0	101	27	36.83	0	46	262	75	27	West of Coast Range
Palm Springs	Riverside	584	72.2	114	34	7.87	0	36	246	72	47	West of Coast Range
Calxico	Imperial	72.0	72.5	113	26	2.83	0	23				West of Coast Range
Mecca	Riverside	-185	72.5	117	26	6.13	0	8	297	25	43	Southeastern California
						2.83	0	16	244	92	29	Southeastern California

B. R.—Broken record.

T.—Indicates trace of precipitation.



DISTRIBUTION OF RAIN AT SELECTED POINTS IN CALIFORNIA

This valuable table is taken from an article on "The Climate of California," by Professor William G. Reed, Instructor in Climatology at the University of California. It is published by permission of "California's Magazine." It will serve to show how widely the rainfall differs in different parts of the State. In general, there is more rain in the north than in the south and more on the mountains than in the valleys.

FISHERIES

Both the interior and the coastal waters of California abound in food and game fish, offering inducements both to the pleasure-seeker and the profit-earner.

There are about 165 species of cold-water fauna whose proper home is north of Point Concepcion, and 117 species of semi-tropical fauna found south of Point Concepcion, beyond the reach of the cold currents of the north.

Of these, 133 varieties of food fish are found in the San Francisco markets, including oysters and shell fish.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento basin. Through the work of the Federal and State Commissioners, however, the rivers have been re-stocked and now there are more salmon in the Sacramento River than ever before, but they are mostly marketed as fish.

The State maintains seven hatcheries, at one of which, the Sisson hatchery, more salmon fry are hatched than at any other hatchery in the world. There is also one hatchery and two egg-collecting stations under Federal supervision.

For the season of 1913 (the latest for which data is available) the Fish and Game Commission report the following distribution of salmon and trout:

Sisson Hatchery	19,693,902
Tahoe Hatcheries	2,119,737
Brookdale Hatchery	912,660
Price Creek Hatchery	1,486,500
Sacramento Experimental Station	359,000
Wawona Hatchery	220,000
Total	24,791,799

Pacific Coast Fishing Industry

Extent of Industry	California
Capital employed	\$10,000,000
Number of persons employed	9,000
Earnings of labor employed	\$3,000,000
Value of output	\$8,000,000

The Alaska Packers' Association maintains two large hatcheries in Alaska, and in 1914 40,246 salmon fry were liberated in the rivers.

Besides the home fisheries, there are employed in packing salmon in Alaska waters and Puget Sound, over fifty San Francisco vessels, many men and a large amount of California capital. The following table shows California's share of the industry, which is very large:

The shipment of canned salmon alone in 1914 was valued at \$4,056,231.

Canned salmon and other fisheries products are sent by sea from San Francisco to nearly every country in the world. The shipments of canned salmon alone for 1914 had a total value of \$4,056,231.

The Alaska Packers' Association report their pack for 1914 as 1,241,980 cases.

The California Salmon Packing Companies report their pack for 1914 as 1,722,563 cases.

The San Francisco codfish fleet in 1914 caught 3,920,802 fish in the waters of Alaska; the total estimated weight was 15,683,208 pounds.

The California sardine pack in 1914 was approximately 75,000 cases, each containing 48 cans. Nearly all of this came from Monterey Bay, where there are two canneries.

The California tuna pack in 1914 amounted to 310,000 cases, valued at \$1,550,000. The 1913 pack was only 115,000 cases. The tuna is found off the coast of Southern California.

There were no whaling operations reported during 1914.

RAILWAYS IN CALIFORNIA

The most important railway event in California during 1914 was the extension of the Northwestern Pacific to Eureka. The first train ran from San Francisco Bay to Eureka on October 23, 1914.

The San Diego and Arizona Railroad, which will eventually connect Imperial Valley with San Diego, is reported finished from San Diego to Campo via Tia Juana, on the west; and on the east from Holtville to a point this side of the Imperial County line, leaving a gap of about thirty-five miles. This road will bring Imperial Valley one hundred miles nearer tidewater.

While development work was carried forward during 1914 on seven hundred miles of projected new railway enterprises, the total mileage of the steam roads for 1914 is less than the total reported last year. This is explained by the State Railroad Commission as being due to an error in including in the Southern Pacific mileage the previous year 3,002 miles which were outside of the State of California. Operating mileage for the year ending June 30, 1914, is as follows:

Steam Roads

Name of road	Mileage
Southern Pacific Co.....	6,165.17
Atchison, Topeka & Santa Fe Railway Co.....	2,151.52
Northwestern Pacific Railroad Co.....	540.84
San Pedro, Los Angeles & Salt Lake Railroad Co.....	511.04
Western Pacific Railway Co.....	497.56
Nevada-California-Oregon Railway	202.84
Tonopah & Tidewater Railroad Co.....	153.20
Pacific Coast Railway Co.....	115.90
Sunset Railway Co.....	108.13
McCloud River Railway Co.....	100.26
Thirty seven other roads in California.....	1,063.90
Total.....	11,610.36

Electric Railways

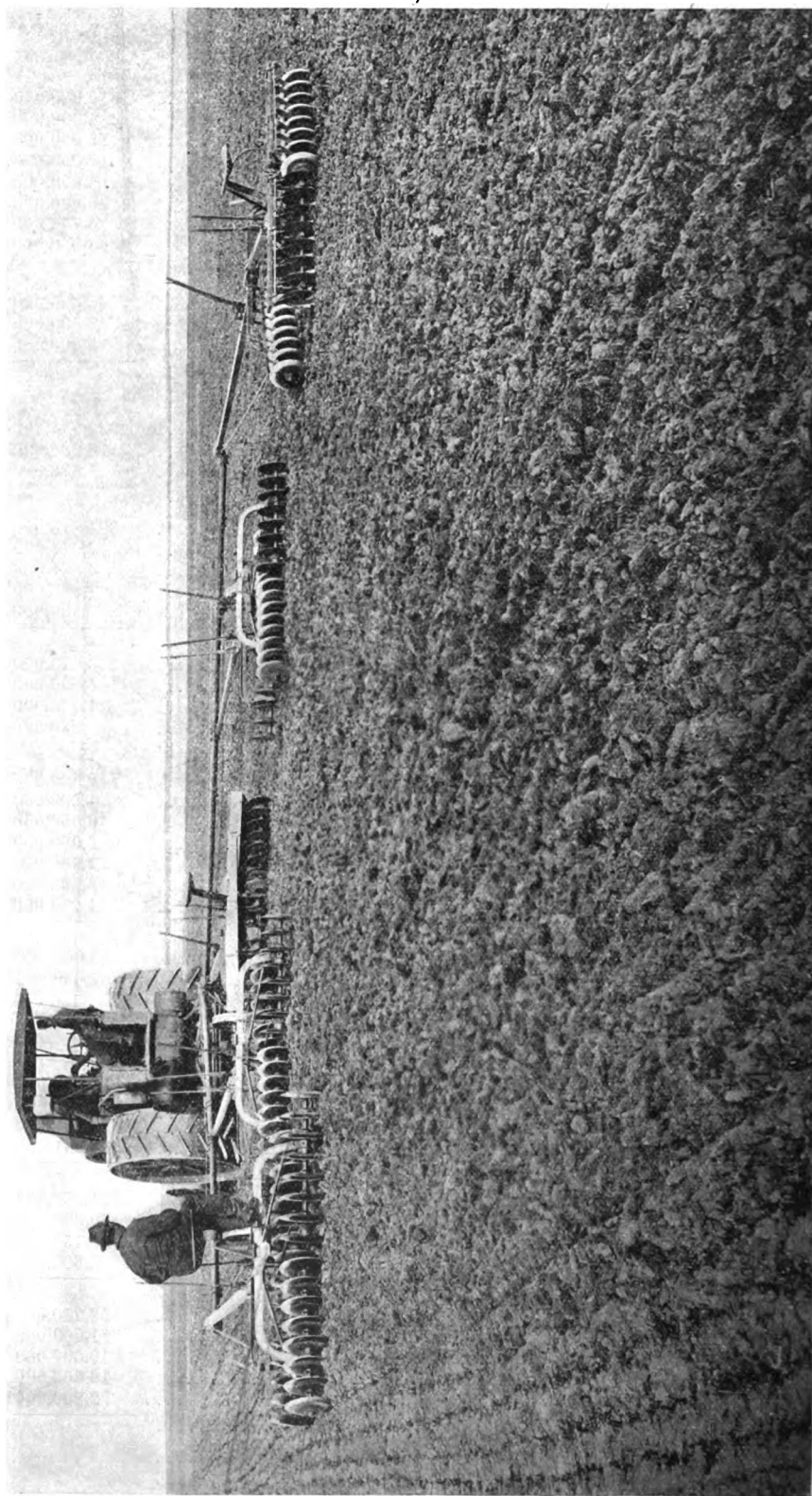
Name of road	Mileage
Pacific Electric Railway Co.....	1,005.77
Los Angeles Railway Corporation.....	385.82
United Railroads of San Francisco.....	274.72
San Francisco-Oakland Terminal Railways.....	257.13
Northern Electric Railway Co.....	166.14
Oakland, Antioch & Eastern Railway.....	113.10
Central California Traction Co.....	78.51
Peninsular Railway Co.....	87.36
San Diego Electric Railway Co.....	63.61
Visalia Electric Railroad Co.....	46.51
San Francisco, Napa & Calistoga Railway.....	44.52
Petaluma & Santa Rosa Railway Co.....	43.30
Nineteen other railways in California.....	324.17
Total.....	2,890.66

MOTOR VEHICLE REGISTRATION IN 1914

According to the "Western Motor Record," the total number of motor vehicles registered in California during the year 1914 was 122,800. This of course includes motorcycles.

SUMMARY OF VALUES

Orchard products:		
Fresh deciduous fruits, not including apples	\$12,000,000	
Apples	4,000,000	
Citrus fruits	25,000,000	
Dried fruits and raisins	15,000,000	
Prunes	5,000,000	
Canned fruits and vegetables	20,000,000	
Olives and olive oil	2,750,000	
Nuts	4,000,000	\$87,750,000
Vineyard products:		
Table grapes	\$8,000,000	
Raisins	7,500,000	
Wine and brandy	15,000,000	\$30,500,000
Garden products, fresh		\$9,850,000
Dairy and poultry products:		
Dairy products	\$33,941,493	
Poultry products	18,205,896	
Honey, wax, etc.	1,222,000	\$53,369,389
Farm products:		
Barley	\$24,815,000	
Wheat	7,072,000	
Oats	4,081,000	
Corn, rye	1,995,000	
Rice	800,000	\$38,763,000
Farm products (continued):		
Hay and forage	\$43,173,000	
Hops	4,000,000	
Sugar beets (paid growers, \$6,000,000)	14,000,000	
Broom corn, tobacco, etc.	230,000	\$61,403,000
Other field crops:		
Potatoes	\$10,600,000	
Potatoes, sweet	1,200,000	
Beans	10,000,000	
Onions	2,960,000	
Seeds and sundry others	2,500,000	
Melons	2,600,000	
Cotton	1,250,000	\$31,110,000
Fish industry:		
Coast and interior (cod, tuna and sardines)	\$5,000,000	
Salmon fisheries, etc.	7,000,000	\$12,000,000
Forest and lumber products		\$45,000,000
Petroleum (103,000,000 barrels)		\$47,487,000
Mineral products, Other:		
Gold	\$21,078,000	
Cement	6,558,000	
Copper	4,055,000	
Other minerals	14,531,630	\$46,222,630
Farm animals and products:		
Increase over 1913	\$21,672,000	
Slaughtered for market in cities	20,000,000	
Slaughtered in rural districts and towns	18,150,000	
Other animal products	5,600,000	\$65,422,000
Sundry others, not included above:		
Nursery products	\$3,250,000	
Florist products	1,000,000	
Fruits marketed in cities	10,000,000	
Vegetables marketed in cities	16,000,000	
Cider, vinegar, etc.	2,200,000	\$32,450,000
Total		\$561,327,019
Manufactures (as reported by census 1910)		529,761,000
Manufactures (Increase 10%)		52,976,100
Grand total		\$1,144,064,119



OIL-PULL TRACTOR, WITH FIVE DOUBLE DISC HARROWS, IN A CALIFORNIA VALLEY

Courtesy of "California's Magazine"

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NOTE:—For the data and statistics used in this report, we are indebted to the following:

Howard C. Rowley, publisher California Fruit News; Mr. G. H. Willson, California Section U. S. Weather Bureau; U. S. Department of Agriculture; Statistical Abstract of the U. S.; State Statistician; State Superintendent of Banks; State Mining Bureau; San Francisco and other Clearing Houses; State Dairy Bureau; State Board of Equalization; State Board of Viticultural Commissioners; State Horticultural Commissioners; U. S. Geological Survey; Fish and Game Commission; Western Canner and Packer; Pacific Rural Press; Alaska Packers' Association; J. K. Armsby Company; U. S. Census Reports; California's Magazine; University of California; State Railroad Commission; Auditing and Freight Departments of Southern Pacific, Santa Fe and Western Pacific Railways; Miles Standish, of Standish-Hickey Lumber Company; California Forest Protective Association; Redwood Statistical Bureau; West Coast Lumberman; California Sugar and White Pine Company; Standard Oil Company; Pacific Gas & Electric Company; Board of Public Works of San Francisco; Pacific Coast Homeseeker; California Land and Water Company; California Fruit Canners' Association; Central California Canneries; Banning Cured Fruit Association; T. A. Burns; E. H. Tryon; Roeding Fig and Olive Company; Coachella Valley Date Growers' Association; James Madison, of the California Associated Raisin Exchange; George P. Weldon, State Horticultural Commission; California Walnut Growers' Association; Santa Barbara Walnut Growers' Association; California Almond Growers Association; C. P. Taft; California Cured Fruit Exchange; Mutual Orange Distributors; Tulare County Citrus Fruit Exchange; Citrus Protective League; G. Harold Powell; W. E. Packard, Imperial Valley Experiment Station; E. Clemens Horst; Lima Bean Growers Association; Barnard and Bunker; Bray Brothers; Professor E. J. Wickson, University of California; J. D. Culp; Willett and Gray; California State Bee Keepers Association; George H. Croley, Federated Poultry Association; California Swine Breeders Association; Sunset Publishing Company; Spreckels Sugar Company; Alameda Sugar Company; American Beet Sugar Company; "Sugar," of Chicago; Statistical report of the San Francisco Chamber of Commerce; Wine and Spirit Review; Horatio Stoll, California Grape Protective Association; Leon Munier, Italian-Swiss Colony; California Fruit Growers Exchange; Building Inspectors of principal cities of State; Boards of Harbor Commissioners at San Francisco, Eureka, Los Angeles; U. S. Customs Service; Postmaster, San Francisco; Pacific Fruit Express Company; California Derrick; Biggs Rice and Land Company; Assessors and Horticultural Commissioners, and Commercial Organizations of various counties. Collector of the Port, San Francisco; and many growers, producers and others throughout the State.

THE SECRETARY OF THE
TREASURY

WASHINGTON, D. C.
JANUARY 1, 1900

TO THE PRESIDENT OF THE
UNITED STATES

FROM THE SECRETARY OF THE
TREASURY

RECEIVED

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1-7-1900

RESEARCH AND INSTRUCTION

1. **Farmers' Short Courses,**
beginning October 4, 1915.
2. **University Farm School,**
beginning September 17, 1915.
3. **Undergraduate Courses in
Agriculture,**
beginning August 13, 1915.
4. **Graduate Courses in
Agriculture,**
beginning Aug. 13, 1915.

1. **Correspondence**
Courses in
Agriculture,
beginning any time.
2. **Agricultural**
Extension,
all the time.

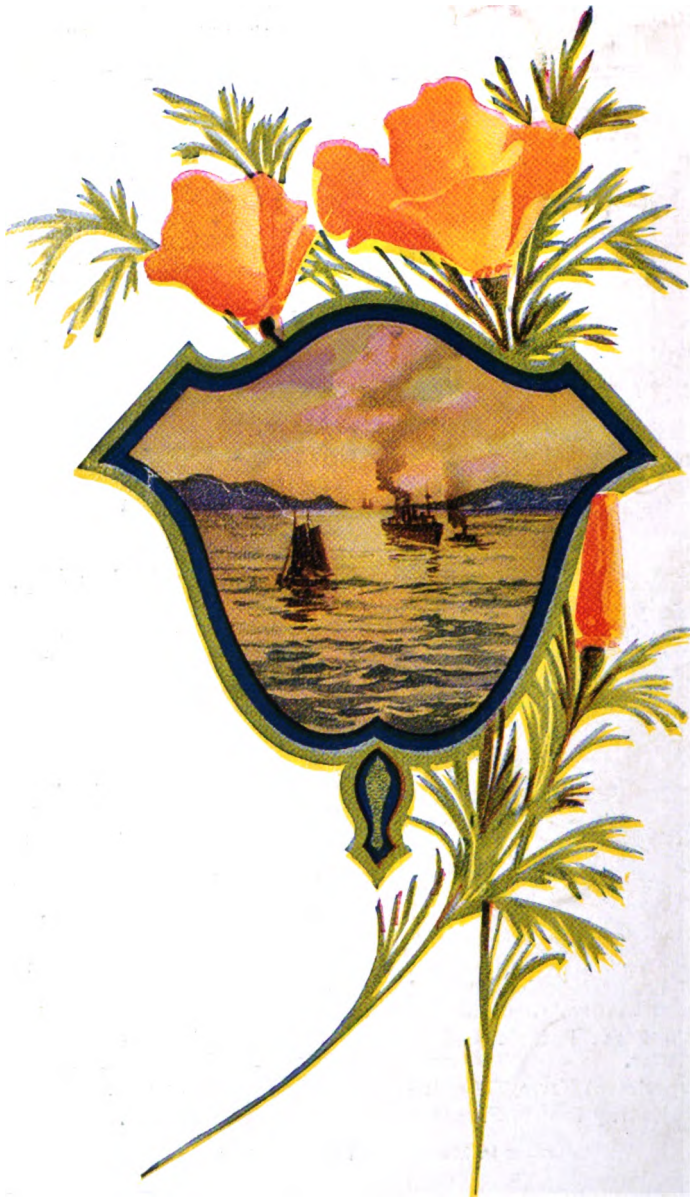
A—Headquarters, Berkeley.
B—University Farm, Davis.
C—Graduate School of Tropical Agriculture and Citrus Experiment Station, Riverside.
D—Southern California Plant Pathological Laboratory, Whittier.
E—Imperial Valley Experiment Farm, El Centro
F—Experiment Tracts, Kearny Ranch, Fresno.

Counties in black have Farm Adviser.

The work of the College of Agriculture is divided into two parts: Research and Instruction.

RESEARCH

It is its duty to investigate the processes of plant and animal life, to discover the methods of control of diseases and insect enemies, to study the most economical methods of producing and marketing farm products and to consider those rural institutions which will best promote both the wealth and welfare of the citizens of the State. More than two hundred experimental projects are under way. Over two hundred and fifty thousand bulletins and circulars, giving the results of these researches are distributed annually. They are sent to citizens of the State free upon request. Address Director of the Agricultural Experiment Station, University of California, Berkeley.



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California

RESOURCES AND POSSIBILITIES



CALIFORNIA
DEVELOPMENT BOARD

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CALIFORNIA 19



EXHIBIT HALL CALIFORNIA DEVELOPMENT BOARD, FERRY BUILDING, SAN FRANCISCO
ONE OF THE MAIN AISLES

CALIFORNIA

RESOURCES AND POSSIBILITIES

TWENTY-SIXTH ANNUAL REPORT

OF THE

California Development Board

FOR THE YEAR 1915

Submitted as of May 1916

CALIFORNIA DEVELOPMENT BOARD

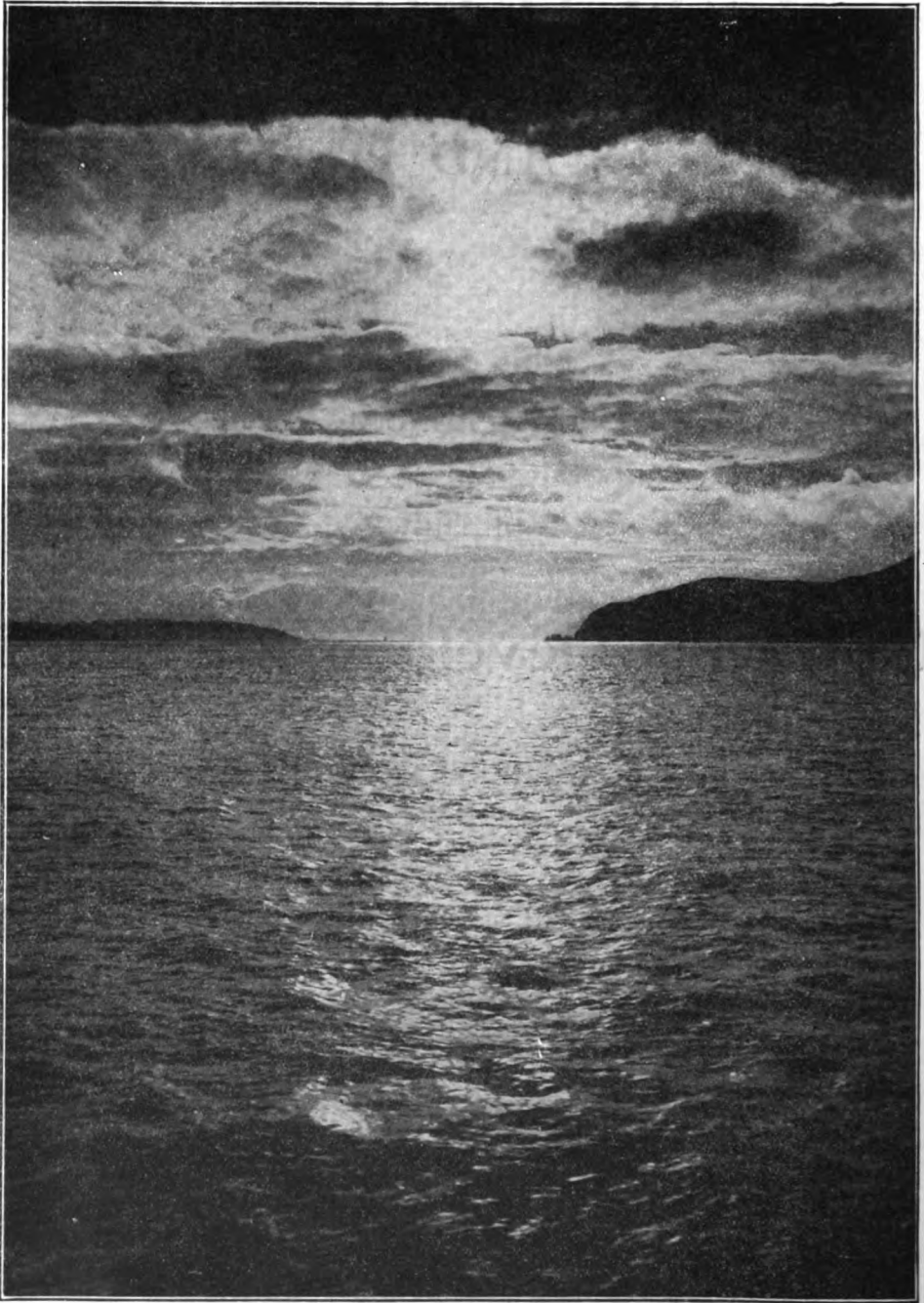
OFFICE AND EXHIBITION HALL

Ferry Building, San Francisco

UPPER FLOOR



The seas



Courtesy of San Francisco Chamber of Commerce
"SUNSET THROUGH THE GOLDEN GATE"



TWENTY-SIXTH ANNUAL REPORT OF THE CALIFORNIA DEVELOPMENT BOARD

TO THE MEMBERS OF THE BOARD:

I have the honor to present herewith the twenty-sixth annual Statistical Report of the California Development Board. This report is the most complete up-to-date record of the progress and production of the State of California which is published, and is the result of painstaking work. If in some respects it may be found lacking in completeness or accuracy, that is only because it has seemed impossible in some cases to get reliable data. Since this report is published in a very large edition for distribution all over the world, the following statement is made as to the character and activities of the Board:

The California Development Board is directed by an Executive Committee composed of fifteen gentlemen active in the public and commercial life of California. Its membership is made up of official representatives appointed by the Boards of Supervisors of thirty-seven counties of the State, together with a representative from each active membership in the Board. Active members consists of persons and firms subscribing \$10 or more per month to our work. Helpful affiliation is sustained with all of the commercial organizations of the State and the Board co-operates closely with the Agricultural Department of the State University and with other official and public agencies. Most of the correspondence from intending settlers received at the Governor's office, the State Department, the Commission of Immigration and Housing and other official bureaus is turned over to us for reply.

The Board furnishes speakers and experienced advice to commercial organizations desiring assistance in their work and seeks to raise the efficiency of all voluntary organizations for commercial and agricultural development. A formal meeting of representatives of all the counties of the State is held at least once each year, at which State-wide problems are discussed. This brief sketch of our work is presented for the information of homeseekers, investors and inquirers to whose hand this statistical report may come.

Correspondence is solicited from all who are interested in California or who desire to locate commercial, manufacturing or agricultural enterprises. All inquiries will be answered impartially and the fullest information obtainable will be gladly furnished. The Board has nothing to sell and does not represent any real estate or commercial enterprise. Its sole object in answering inquiries is to give such information as will enable homeseekers and investors to secure a thorough knowledge of the conditions in the localities in which they are interested.

Some Board Activities of the Year

Our Information Bureau at the Ferry Building has been conducted with efficiency. The average daily attendance at the desk has been about 350. At least half of these applicants asked merely for county literature, but a great many required specific

information and personal attention. From two to four members of the staff have been constantly on duty throughout the year.

The large amount of agricultural clippings and manuscript data on file in our reference library has been classified during the year according to the Dewey decimal system, which makes it instantly available. Additional county maps have been added and our stock of county literature greatly increased. The agricultural surveys made by our own field men have been of immense service to this department. Complete surveys of fourteen counties are now available and the information has been properly classified. The United States soil surveys and topographical maps have also reinforced this accurate stock of information. Inquiry letters from all parts of the world have been handled daily and those who were prospective settlers have been referred to the commercial secretaries in the counties about which they made inquiry. Our postage expense for the year was \$1,677.78.

Thirty-five counties maintain exhibits in the rooms in the Ferry Building, and Del Norte County is now preparing an attractive display which will be installed in the near future.

The county exhibits have been largely refurnished and brought up to date through contributions from the Exposition exhibits.

Several changes have been made in the exhibit rooms. The offices have been brought from the lower end of the building to the upper end, and the process room and laboratory moved to the farther end. Partitions have been moved to make additional exhibit space. The silk spinning machine of the California Ladies' Silk Culture Society, which was on exhibition in the Varied Industries Palace, has been installed as a feature exhibit, and it is hoped that later in the season the process of reeling and spinning the silk will be demonstrated by an expert in this line.

The attendance during the year was exceptionally good. During one typical week some 2,500 visitors registered, over one-third of whom were from points outside the State. Lectures have been maintained steadily by the county representatives and the Board, with an average attendance of about 1,000 per week.

Motion pictures showing special films of California industries have been run twice daily in addition to the regular lectures.

During the year 18,000 copies of the Annual Report of the Board were distributed, besides 20,000 separate State maps and 240,000 of our monthly bulletins. Approximately 250,000 county booklets and miscellaneous pieces of literature were distributed.

Special publications distributed during the year were as follows:

	Copies
1. Annual Reports.....	18,000
2. Hogs in California.....	1,000
3. Dairying in California.....	1,000
4. Vacant Lands in California.....	1,000
5. Soils of California.....	1,000
6. Olives in California.....	1,000
7. Objects and Some Activities of the California Development Board.....	1,000
8. Monthly Bulletin.....	240,000
9. Geographical, Topographical, State Highway and Railroad Maps of California.....	20,000
10. Week's Activities.....	8,300

The Board's activities throughout the pre-Exposition and Exposition years, held a helpful and distinct relation to the Exposition, cordial appreciation of which has come to the Board in many ways.

Throughout the year the Board has kept closely in contact with the counties of the State and has extended in every way helpful co-operation to the district and local organizations.

The county survey work has been resumed and is being pushed vigorously.

The finances of the Board are in good condition and there are no outstanding debts.

The annual statistical report, covering the calendar year 1915, follows.

Respectfully submitted,

ROBERT NEWTON LYNCH,

Vice-President and Manager.

ANNUAL STATISTICAL REPORT

Growth in Population and Development of California Since It Became a State

(U. S. Census Returns:)

Year	Population of State	Number of farms	Average acres per farm	Avg. value of land and buildings per acre
1850.....	92,597	878	4,465.6	0.99
1860.....	379,994	18,716	466.4	5.58
1870.....	560,247	23,724	481.7	12.36
1880.....	864,694	35,934	461.8	15.79
1890.....	1,208,130	52,814	405.	32.53
1900.....	1,485,052	72,542	397.4	24.56
1910.....	2,377,549	88,197	316.7	51.93

Irrigation

Of the 88,197 farms in the State, 39,352 (46.6 per cent) were irrigated in 1909. The area reported as irrigated in 1909 was 2,664,104 acres, or 23.4 per cent of the improved land in farms. The area to which enterprises existing in 1910 were capable of supplying water was 3,619,378 acres, and the total acreage included in irrigation projects (completed or under way) in 1910 was 5,490,360 acres.

Population, Number of Farms and Farm Acreage

Census year	Population	Farms		Land in farms		Per cent of land area in farms	Per cent of farm land improved
		Number	Per cent of increase	Acres	Improved land (acres)		
1910.....	2,377,549	88,197	21.6	27,931,444	11,389,894	28.0	40.8
1900.....	1,485,053	72,542	37.1	28,828,951	11,958,837	28.9	41.5
1890.....	1,213,398	52,894	47.2	21,427,293	12,222,839	21.5	57.0
1880.....	864,694	35,934	51.5	16,593,742	10,669,698	16.7	64.3
1870.....	560,247	23,724	26.8	11,427,105	6,218,133	11.5	54.4
1860.....	379,994	18,716	2,046.3	8,730,034	2,468,034	8.8	28.3
1850.....	92,597	872	.....	3,893,985	32,454	3.9	0.8

Farm Operations in 1910

Color and nativity	Total		Owners	Tenants	Man-agers	Per cent of total		
	Number	Per cent distribution				Owners	Tenants	Man-agers
Native white.....	58,926	66.8	45,780	10,505	2,641	77.7	17.8	4.5
Foreign-born white....	26,193	29.7	19,914	5,565	714	76.0	21.2	2.7
Negro and other non-white.....	3,078	3.5	938	2,078	62	30.5	67.5	2.0
Total.....	88,197	100.0	66,632	18,148	3,417	75.5	20.6	3.9

Density of Population

In 1900, twenty States ranked ahead of California in population. In 1910, only eleven had that honor. In the ten-year period the Golden State has outstripped nine of them, taking twelfth place.

The density of the population is still but 15.2 persons to the square mile.

Population of California Counties

The estimates for 1914 are all official estimates. The initials in the last column show the authority for each: C of C=Chamber of Commerce; B of S=Board of Supervisors; Co. Cl=County Clerk. Repeated efforts to secure even an estimate from all of the counties have been unavailing, though many officials were appealed to in each county. The official figures for 1910 are used in the case of each delinquent county.

Population of California Counties

Counties	County Seat	Land area in Square Miles, 1910	Population 1910 U. S. Census	Per Cent of Increase 1900-10	Population Dec. 31, 1914 (Estimated)	Author- ity
Alameda.....	Oakland.....	732	246,131	89.0	359,000	C of C
Alpine.....	Markleeville.....	776	309	-39.3	309	1910
Amador.....	Jackson City.....	601	9,086	-18.3	11,000	Co Cl
Butte.....	Oroville.....	1,722	27,301	59.5	31,000	C of C
Calaveras.....	San Andreas.....	1,027	9,171	-18.1	9,171	1910
Colusa.....	Colusa.....	1,140	7,732	5.0	7,882	C of C
Contra Costa.....	Martinez.....	714	31,674	75.5	52,500	C of C
Del Norte.....	Crescent City.....	1,024	2,417	0.4	2,417	1910
El Dorado.....	Placerville.....	1,753	7,492	-16.6	8,000	Co Cl
Fresno.....	Fresno.....	5,950	75,657	99.8	120,000	B of S
Glenn.....	Willows.....	1,259	7,172	39.3	7,172	1910
Humboldt.....	Eureka.....	3,634	33,857	24.9	37,500	C of C
Imperial.....	El Centro.....	4,089	13,591	....	50,000	C of C
Inyo.....	Independence.....	10,019	6,974	59.3	7,500	B of S
Kern.....	Bakersfield.....	8,003	37,715	128.9	50,000	B of S
Kings.....	Hanford.....	1,159	16,230	64.4	23,500	C of C
Lake.....	Lakeport.....	1,278	5,526	-8.2	5,600	C of C
Lassen.....	Susanville.....	4,531	4,802	6.5	7,000	Co Cl
Los Angeles.....	Los Angeles.....	4,067	504,131	196.0	815,000	C of C
Madera.....	Madera.....	2,112	8,368	31.5	12,000	C of C
Marin.....	San Rafael.....	529	25,114	59.9	28,400	C of C
Mariposa.....	Mariposa.....	1,463	3,956	-16.2	3,956	1910
Mendocino.....	Ukiah.....	3,453	23,929	16.9	27,000	C of C
Merced.....	Merced.....	1,995	15,148	64.4	20,000	C of C
Modoc.....	Alturas.....	3,823	6,191	22.0	6,191	1910
Mono.....	Bridgeport.....	3,030	2,042	5.8	2,100	Co Cl
Monterey.....	Salinas.....	3,330	24,146	24.6	25,250	C of C
Napa.....	Napa.....	783	19,800	20.4	26,500	C of C
Nevada.....	Nevada City.....	974	14,955	-15.9	15,500	C of C
Orange.....	Santa Ana.....	795	34,436	74.8	56,500	C of C
Placer.....	Auburn.....	1,395	18,237	15.5	18,237	1910
Plumas.....	Quincy.....	2,594	5,259	12.9	5,259	1910
Riverside.....	Riverside.....	7,240	34,696	93.9	45,000	Co Cl
Sacramento.....	Sacramento.....	983	67,806	47.7	67,806	1910
San Benito.....	Hollister.....	1,392	8,041	21.2	8,750	Co Cl
San Bernardino.....	San Bernardino.....	20,157	56,706	103.0	53,000	B of S
San Diego.....	San Diego.....	4,221	61,665	75.7	125,379	Co Cl
San Francisco.....	San Francisco.....	43	416,912	21.6	528,705	C of C
San Joaquin.....	Stockton.....	1,448	50,731	43.1	70,000	C of C
San Luis Obispo.....	San Luis Obispo.....	3,334	19,383	16.5	25,000	C of C
San Mateo.....	Redwood City.....	447	26,585	119.8	35,000	C of C
Santa Barbara.....	Santa Barbara.....	2,740	27,738	46.5	32,750	C of C
Santa Clara.....	San Jose.....	1,328	83,539	38.7	90,000	B of S
Santa Cruz.....	Santa Cruz.....	435	26,140	21.5	30,140	C of C
Shasta.....	Redding.....	3,858	18,920	9.3	19,000	Co Cl
Sierra.....	Downieville.....	923	4,098	2.0	4,098	1910
Siskiyou.....	Yreka.....	6,256	18,800	10.8	25,000	Co Cl
Solano.....	Fairfield.....	822	27,559	14.1	31,000	C of C
Sonoma.....	Santa Rosa.....	1,577	48,394	25.8	48,394	1910
Stanislaus.....	Modesto.....	1,450	22,522	135.8	30,000	C of C
Sutter.....	Yuba City.....	608	6,328	7.5	9,375	Co Cl
Tehama.....	Red Bluff.....	2,893	11,401	3.7	14,575	Co Cl
Trinity.....	Weaverville.....	3,166	3,301	-24.7	3,250	Co Cl
Tulare.....	Visalia.....	4,856	35,440	92.9	34,500	C of C
Tuolumne.....	Sonora.....	2,190	9,979	-10.6	9,979	1910
Ventura.....	Ventura.....	1,878	18,347	27.7	21,000	C of C
Yolo.....	Woodland.....	1,014	13,926	2.3	15,000	Co Cl
Yuba.....	Marysville.....	639	10,042	16.5	14,750	Co Cl
California ..	.....	155,652	2,377,549	60.1	3,242,895	

Since the estimate of the State Statistician for July 1, 1914, is only 2,757,895, it is probable that some of these 1914 estimates are mere guesses, on the optimistic side.

Principal Cities of California

This table gives the population of cities in California having over 5,000 inhabitants in 1910, according to the U. S. Census, with comparisons for 1900:

Cities	Population 1900	Population 1910
	U. S. Census	U. S. Census
Alameda.....	16,464	23,383
Alhambra.....	.....	5,021
Bakersfield.....	4,836	12,727
Berkeley.....	13,214	40,434
Eureka.....	7,327	11,845
Fresno.....	12,470	24,892
Long Beach.....	2,252	17,809
Los Angeles.....	102,479	319,198
Marysville.....	3,497	5,430
Napa.....	4,036	5,791
Oakland.....	66,960	150,174
Pasadena.....	9,117	30,291
Petaluma.....	3,871	5,880
Pomona.....	5,526	10,207
Redlands.....	4,797	10,449
Richmond.....	.....	6,802
Riverside.....	7,973	15,212
Sacramento.....	29,282	44,696
San Bernardino.....	6,150	12,779
San Diego.....	17,770	39,578
San Francisco.....	342,782	416,912
San Jose.....	21,500	28,946
San Luis Obispo.....	3,021	5,157
San Rafael.....	3,789	5,934
Santa Ana.....	4,933	8,429
Santa Barbara.....	6,587	11,659
Santa Cruz.....	5,659	11,146
Santa Monica.....	3,057	7,847
Santa Rosa.....	6,673	7,817
Stockton.....	17,506	23,253
Vallejo.....	7,965	11,340
Total for above cities.....	739,513	1,314,037

Since 1910 the following cities have grown into the 5,000 class, according to the estimates of their respective commercial organizations:

Corona, East San Diego, El Centro, Grass Valley, Imperial City, Modesto, Monterey, Ontario, Palo Alto, Porterville, Visalia, Woodland.

Summary of the State

	Population		Increase Per Cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Bay counties.....	925,708	658,156	40.6	7,108	130.2	37.6
South of Tehachapi.....	751,310	304,209	146.9	45,102	16.6	9.9
Sacramento Valley.....	153,708	114,656	34.6	10,280	14.9	3.8
San Joaquin Valley.....	261,811	143,179	80.2	27,176	9.7	4.4
Rest of State.....	285,012	264,853	7.6	66,506	4.2	.4
	2,377,549	1,458,053	60.1	156,172	15.2	5.7

This segregation shows that the greatest gain per square mile has been in the counties about San Francisco Bay, while the greatest aggregate gain and the greatest rate of increase has been south of the Tehachapi.

Of the two great interior valleys, the San Joaquin Valley has made the greatest aggregate gain, 118,632, and the greatest gain per cent, 80.2; while the Sacramento Valley made an aggregate gain of 39,042, and a gain per cent of 34.6.

The remaining counties of the State, twenty-five in number, show an aggregate gain of 20,159, and a net gain of 7.6 per cent.

Urban and City Population

Class of places	Population		Increase 1900 to 1910	
	1910	1900	Number	Per cent
The State.....	2,377,549	1,485,053	892,496	60.1
Urban territory.....	1,469,739	810,193	659,546	81.4
Cities and towns of—				
100,000 inhabitants or more.....	886,284	514,008	372,276	72.4
25,000 to 100,000 inhabitants.....	183,945	90,813	93,132	102.6
2,500 to 25,000 inhabitants.....	399,510	205,372	194,138	94.5
Remainder of the State.....	907,810	675,860	232,950	34.5

THE GAIN ON THE PACIFIC SLOPE

While the gain in population for the whole of the Continental United States, as shown by the Census of 1910, was 15,977,691, an increase of 21 per cent, the eleven States of the Pacific Slope, as given in the table below, show an aggregate increase of 2,734,567, an increase of 66.8 per cent.

The combined area is 1,175,742 square miles, which makes an average population per square mile of 5.8 persons, while the average population per square mile for the Continental United States is 30.9 persons.

Pacific Slope States

	Population		Increase	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Montana.....	376,053	243,329	54.5	145,310	2.6	.9
Wyoming.....	145,965	92,531	56.8	97,575	1.5	.6
Colorado.....	799,024	539,700	48	103,645	7.5	2.3
New Mexico.....	327,396	195,300	67.6	122,460	2.7	1.1
Arizona.....	204,354	122,931	66.2	112,920	1.8	.7
Utah.....	373,351	276,749	34.9	82,190	4.5	1.1
Nevada.....	81,875	42,335	93.4	109,740	.8	.4
Idaho.....	325,594	161,772	101.3	84,290	3.9	2.
Washington.....	1,141,990	518,103	120.4	66,880	17.	9.3
Oregon.....	672,765	413,536	62.7	94,560	7.1	2.7
California.....	2,377,549	1,485,053	60.1	156,172	15.2	2.7
Total.....	6,825,916	4,091,349	66.8	1,175,742	5.8	2.4



THE DEVELOPMENT OF AGRICULTURE IN CALIFORNIA

The remarkable growth of the State is shown by the following tables, giving the acreage of the most important crops in 1862, in 1910 and in 1915:

	1862 Agr. report acres	1910 Census report acres	1915 State Board of Equalization acres
Indian corn.....	17,339	51,935	104,364
Wheat.....	361,351	478,637	905,760
Rye.....	1,415	7,027	22,765
Oats.....	36,607	192,158	337,562
Barley.....	223,217	1,195,158	1,896,421
Potatoes.....	3,624	72,799	59,750
Hay and forage.....	250,464	2,049,213	1,955,238
Total.....	894,017	4,046,927	5,281,860

To these figures should be added the following acreages not mentioned in the 1862 report:

	1910	1914	1915
Hops.....	8,391	13,350	14,353
Celery.....	5,600	3,660	3,695
Beans.....	157,825	186,245	225,211
Standing alfalfa.....	487,134	763,538	805,855
Cotton.....	15,000	41,800	23,140
Sugar beets.....	101,000	94,898	118,034
Kaffir corn, etc.....	50,194	44,308	.....
Totals.....	825,144	1,147,809	1,190,288

(The last item included mustard seed, etc., 1910, while the figures for 1914 refer only to kaffir corn and milo maize.)

Besides this increase in acreage of the staple crops, California had, according to the reports of the State Board of Equalization, vines and fruit trees as follows, bearing and not bearing in 1914-15.

Vineyards

	No. of acres	
	1910	1915
Table grapes.....	53,729	71,017
Raisin grapes.....	128,217	120,792
Wine grapes.....	160,573	194,860
	342,519	386,669

Orchards

Deciduous fruits		Citrus fruits	
	No. of trees		No. of trees
	1910		1915
Apple.....	2,143,815	Orange.....	10,803,221
Apricot.....	2,593,884	Lemon.....	1,810,616
Cherry.....	601,520	Pomelo.....	18,886
Fig.....	549,875	Lime.....	1,716
Nectarine.....	63,773	Total.....	12,634,439
Olive.....	1,190,452		12,738,240
Peach.....	10,922,994		
Pear.....	1,499,932	Nuts	
Plum.....	1,059,453	Almond.....	1,204,382
Prune.....	8,998,831	Walnut.....	891,147
Total.....	19,624,529	Total.....	2,095,529
			3,835,954

FINANCIAL CONDITIONS IN CALIFORNIA

San Francisco is the financial center of the Pacific Coast. On June 23, 1915, the latest date for which complete figures are available, the principal items of the resources and liabilities of the banks of San Francisco and of California were as follows:

Capital, Surplus and Undivided Profits

	San Francisco	California
National banks.....	\$51,642,347.53	\$103,663,827.18
State commercial and trust.....	14,484,284.61	54,414,062.91
Total commercial.....	\$66,126,632.14	\$158,077,910.09
Savings banks.....	17,244,524.69	53,610,181.80
Totals.....	\$83,371,156.83	\$211,688,091.89

Individual Deposits

	San Francisco	California
National banks.....	\$111,106,743.14	\$278,116,524.80
State commercial and trust.....	53,119,813.35	143,731,185.25
Total commercial.....	\$164,226,556.49	\$421,847,710.05
Savings banks.....	207,052,120.69	468,594,300.18
Totals.....	\$371,278,677.18	\$890,442,010.23

Loans and Discounts, Including Overdrafts

	San Francisco	California
National banks.....	\$119,620,735.55	\$277,744,223.49
State commercial and trust.....	34,505,407.33	116,054,127.62
Total commercial.....	\$154,126,142.88	\$393,798,351.11
Savings banks.....	142,530,695.65	354,925,846.80
Totals.....	\$296,656,838.53	\$748,724,197.91

Resources

	San Francisco	California
National banks.....	\$236,484,663.64	\$510,548,714.18
State commercial and trust.....	73,257,120.46	208,686,677.22
Total commercial.....	\$309,741,784.10	\$719,235,391.40
Savings banks.....	226,833,436.10	522,761,190.77
Totals.....	\$536,575,220.20	\$1,241,996,582.17

The Banks of California

On June 23, 1915, there were in California 468 state banks, with 95 branch offices. Of these 136 are commercial banks; 130 are savings banks; 7 are trust companies; 184 are commercial and savings departmental banks; 17 are commercial, savings and trust companies; 3 are savings and trust companies; and 1 is a commercial and trust company. They are called departmental banks for the reason that the laws of this State, while permitting banks to do both commercial and savings business, require a complete segregation of the two lines of business, including a physical separation of assets, so that the failure of one department does not necessarily impair the solvency of the other.

The following statement from Mr. W. R. Williams, Superintendent of Banks, dated October 30, 1915, shows the financial condition of California.

"The general banking situation in the State during the year has been satisfactory in the face of world conditions of the most distressing character. State bankers have met emergencies soberly, confidently and with a firm purpose of conservatism in the handling of their resources. It is worthy of note that not a single bank in the State

system was compelled to close its doors—a fact illustrative of the high character of our banking laws and the judgment of our bankers.

Credit has been easy and no enterprise worthy of consideration has suffered from lack of accommodation. Fortunately no local perplexity has complicated the international crisis established by the European war. We have felt but faintly the effects of this upheaval and our banks, reflecting the orderly conduct of industrial affairs, have enjoyed prosperity.

"In the face of general unrest and uncertainty the resources of State banks have increased during the fiscal year in the sum of \$14,428,631.05. Loans and discounts have expanded in the amount of \$5,562,623.25 and deposits have grown \$5,852,511.69, making a splendid aggregate of \$581,410,023.79. As a further evidence of the confidence which has marked the progress of the year the total of capital and surplus in State banks has been enlarged to the extent of \$278,370, primarily to meet the demand of an increasing deposit liability. Credit necessities, therefore, have adequately been met by the banks. The savings banks in the State system have justified every effort made in behalf of their well-being and security. Not a single notice of withdrawal was required during the year. Deposits grew until the enormous aggregate was on June 23, 1915, the date of the final called report of the fiscal year, \$458,708,427.69, an increase of \$9,466,788.12."

It is with interest that we note that seven institutions accepted the privilege of making collections for school children giving vigorous encouragement to thrift in young people.

	June 30, 1914	June 23, 1915	Increase	Decrease
Assets.....	\$714,330,336.89	\$728,758,967.94	\$14,428,631.05	.....
Loans and discounts.....	465,417,351.17	470,979,974.42	5,562,623.25	.....
Cash on hand.....	30,548,948.12	27,568,582.04	.....	\$2,980,366.08
Capital.....	62,173,816.66	62,452,186.66	278,370.00	.....
Surplus.....	28,489,063.82	28,568,208.49	79,144.67	.....
Undivided profits.....	10,524,715.30	17,003,869.56	6,479,154.26	.....
Individual deposits.....	575,557,512.10	581,410,023.79	5,852,511.69	.....

Clearing House Exhibits

The bank clearings of San Francisco have more than doubled since 1900. Los Angeles, the other large financial center of the State, while showing a smaller aggregate, has a larger proportionate increase.

The San Francisco Clearing House was organized May, 1876. The clearings for the 8½ months of that year were \$476,125,237.97. In 1890 they were \$851,066,172.90. In 1900 they were \$1,029,582,574.78. In 1913 they were \$2,624,428,824.74.

In the 38 years of its existence the total amount of clearings has been \$44,233,-283,096.16. The average daily clearings increased from \$1,927,624 in 1876 to \$8,895,-554.66 in 1912, and \$6,892,889 in 1914.

The gain in volume of clearing house business strongly reflects the increase in the mineral and agricultural products and the increase in the amount of exports and imports, as well as the sales of real estate and the building operations of the city.

Other cities of California show an increase that indicates the marvelous development of the State now going on.

The record of clearings in the two principal cities in the past thirteen years is as follows:

San Francisco

Year	Clearings
1902.....	\$1,373,362,025.31
1903.....	1,520,200,682.07
1904.....	1,534,631,136.73
1905.....	1,834,549,788.51
1906.....	1,998,400,779.06
1907.....	2,133,882,625.80
1908.....	1,757,151,850.08
1909.....	1,979,872,570.06
1910.....	2,323,772,870.99
1911.....	2,427,075,543.46
1912.....	2,677,561,952.27
1913.....	2,624,428,824.74
1914.....	2,516,004,817.00
1915.....	2,693,688,925.00

Los Angeles

Year	Clearings
1902.....	\$245,516,094.85
1903.....	307,316,530.90
1904.....	345,343,956.35
1905.....	478,985,298.40
1906.....	578,635,516.82
1907.....	581,803,982.00
1908.....	505,588,756.02
1909.....	673,165,728.81
1910.....	811,377,487.47
1911.....	942,914,424.19
1912.....	1,168,941,700.02
1913.....	1,211,167,980.18
1914.....	1,145,167,110.19
1915.....	1,048,130,652.00

The total clearings for the United States for 1912 showed an increase as compared with 1911 of but 9 per cent; San Francisco had an increase of over 10 per cent

and Los Angeles of over 23 per cent. For 1912 San Francisco was eighth in the list of clearings and Los Angeles twelfth. In 1913 San Francisco held its rank of eighth on the list and Los Angeles was fourteenth. The same was true in 1914, also.

Bank Clearings for 1915

San Francisco.....		\$2,693,688,925.00
Nearly a million greater than the combined clearings of the next six largest Coast cities:		
Los Angeles.....	\$1,048,130,652	
Seattle.....	612,451,916	
Portland.....	554,451,753	
Oakland.....	181,705,213	
San Diego.....	99,512,791	
Tacoma.....	98,668,247	\$2,594,920,572

Other Clearing House Cities

	1910	1911	1912	1913	1914	1915
Oakland.....	\$157,460,588.22	\$172,666,406.17	\$222,570,346.29	\$188,730,763.00	\$176,074,062.82	\$181,464,630.00
Sacramento.....	69,447,281.94	78,376,700.21	92,747,060.69	106,268,688.39	103,286,903.09	101,129,004.00
San Diego.....	66,708,874.00	82,724,333.47	131,894,087.00	134,145,293.00	103,102,397.90	99,636,946.00
Fresno.....	37,930,473.07	39,782,776.05	51,400,594.73	57,384,801.12	53,442,675.00	58,554,334.00
Stockton.....	32,277,582.58	40,358,582.58	45,064,374.68	45,925,831.09	47,257,207.00	50,241,377.00
San Jose.....	27,828,978.64	29,877,754.37	35,882,473.55	35,730,898.59	36,344,889.14	34,935,898.00
Pasadena.....	40,570,318.90	41,607,900.10	47,144,736.48	47,818,722.51	43,946,058.76	43,831,330.99
Bakersfield (organized in March, 1912).....			21,500,000.00	23,656,106.08	23,561,316.96	20,130,949.00
Long Beach (organized May 18, 1914).....					17,878,405.86	26,418,091.00
Santa Rosa.....					12,869,860.00	11,951,550.00

FEDERAL BUSINESS IN SAN FRANCISCO FOR 1915

Postal receipts.....	\$3,324,989.00	Imports (foreign).....	\$83,338,138.00
Customs receipts.....	4,502,422.50	Exports (foreign).....	80,512,393.00
Internal revenue receipts.....	10,796,672.00	Tonnage, arrivals, 1915..... tons	7,486,683.00

The commerce of the port reached nearly every country in the world, as shown in the following statement prepared by the San Francisco Chamber of Commerce:

FOREIGN TRADE OF SAN FRANCISCO HARBOR FOR 1915 AS COMPARED WITH THAT OF 1914

(Figures furnished by the San Francisco Chamber of Commerce.)

Imports

For 1914 the imports amounted to \$69,995,217, while the total for 1915 was \$83,338,138, an increase of \$13,342,921.

Exports

For 1915 the exports were \$80,512,393, an increase of \$16,228,301. The following is the summary of the countries:

Australia-Tasmania: Increase, \$4,068,255. Gasoline, lubricating oil, prunes, salmon.
Bolivia: Decrease, \$3,077. Salmon.
British India: Increase, \$15,222. Gasoline, lubricating oil, salmon.
Other British East Indies: Decrease, \$1,241. Salmon, prunes.
Other British Oceania: Increase, \$54,698. Illuminating oil, gasoline.
British South Africa: Increase, \$32,061. Salmon.
Canada: Decrease, \$1,319,657. Residium, prunes, raisins.
Chili: Increase, \$48,910. Residium, salmon, rice.
China: Decrease, \$575,184. Illuminating oil, cotton, residuum.
Costa Rica: Increase, \$40,972. Gasoline, salmon, codfish.
Colombia: Increase, \$1,090. Illuminating oil, wine, salmon.
Cuba: Increase, \$7,176. Beans.
Denmark: Increase, \$1,224,750. Prunes, peaches, apricots, barley.
Dutch East Indies: Increase, \$186,441. Salmon, lubricating oil, apricots.

Dutch Guiana: Increase, \$3,770. Salmon.
Dutch West Indies: Decrease, \$475. Barley.
Ecuador: Increase, \$13,559. Salmon, wine, flour.
Egypt: Decrease, \$19,285. Salmon.
England: Increase, \$2,861,763. Salmon, prunes, peaches, barley.
France: Decrease, \$25,485. Barley.
French East Indies: Increase, \$799. Canned fruit, canned vegetables.
French Oceania: Decrease, \$135,388. Salmon, gasoline, illuminating oil, wine.
French Guiana: Increase, \$231. Salmon.
German Oceania: Increase, \$33,786. Salmon, illuminating oil, gasoline.
Guatemala: Increase, \$312,444. Flour, illuminating oil, raisins, residuum, wine.
Honduras: Increase, \$162,593. Flour, gasoline, illuminating oil.
Hongkong: Increase, \$33,319. Codfish, illuminating oil, lubricating oil, residuum.
Ireland: Increase, \$1,860,548. Barley, hops.
Jamaica: Decrease, \$3,585. Salmon.
Japan: Increase, \$811,310. Raw cotton, illuminating oil, lubricating oil, raisins.
Japanese China: Increase, \$142,672. Residuum, prunes, illuminating oil, peaches.
Mexico: Increase, \$2,014,570. Cotton, gasoline, illuminating oil, residuum.
Netherlands: Decrease, \$71,248. Beans.
New Zealand: Increase, \$1,953,505. Raisins, prunes, illuminating oil, apricots.
Nicaragua: Increase, \$278,623. Flour, gasoline, illuminating oil, raisins, residuum.
Norway: Increase, \$672,508. Apricots, barley, raw cotton, raisins.
Panama: Decrease, \$348,814. Gasoline, residuum, salmon, wine.
Peru: Decrease, \$7,914. Residuum, salmon, codfish, prunes.
Philippine Islands: Decrease, \$428,697. Salmon, raisins, raw cotton, raw coffee.
Russia in Europe: Increase, \$1,817,038. Raw cotton.
Salvador: Increase, \$392,403. Residuum, illuminating oil, gasoline, flour.
Scotland: Decrease, \$51,056. Barley, salmon, apricots.
Siam: Decrease, \$36,333. Canned fruit, canned vegetables.
Straits Settlements: Decrease, \$477,377. Lubricating oil, prunes, salmon.
Sweden: Increase, \$1,949,766. Dried apples, apricots, peaches, prunes.
Venezuela: Decrease, \$292.

COMMERCIAL MOVEMENTS BY SEA FOR 1915

The following figures are taken from the annual reports of the United States Collectors of Customs.

	Imports	Exports
San Francisco.....	\$83,338,138	\$82,400,761
Los Angeles.....	4,135,806	2,632,532
	<u>\$87,473,944</u>	<u>\$85,033,293</u>

PROGRESS IN THE METROPOLIS

The ninth anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.

San Francisco has won the admiration and wonder of the world by the courage and energy of its rebuilding, and stands today more fit than ever to occupy its proper place among the great cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represented sixty-one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of its people has been justified and greater prosperity for the future is assured.

To this prosperity the whole State contributes and in it shares.

San Francisco can now claim to be, in character and equipment of its new structures, the most up-to-date city in the world. It was authorized by the Federal Government to invite the nations of the world to the Panama-Pacific International Exposition in 1915, and that enterprise was inaugurated in Golden Gate Park, October 14, 1911, by the turning of the first shovelful of earth by Wm. H. Taft, then President of the United States.

That it had nobly fulfilled this trust was shown on February 20, 1915, when the greatest of all Expositions was formally set in motion at the appointed hour by President Woodrow Wilson, with whose office in Washington an electrical connection had been made.

Reconstruction of San Francisco

The reconstruction of the city involved vast expenditures by the municipality for streets, sewers, fire system, school houses and other municipal buildings, all of which have been of the most substantial character. The following list, from the Chamber of Commerce, covers the period from 1906 to June, 1915:

The buildings destroyed in San Francisco by the fire of 1906 numbered 28,188 valued at \$105,000,000. The money expended by private parties for labor on the new buildings has amounted to some \$100,000,000, while the municipality has expended large sums on the same account.

Expended Since 1906 by the Municipality

New sewer system, nearly complete.....	\$6,150,000
High pressure fire system.....	5,750,000
Municipal street railways.....	5,500,000
Asphalt plant.....	60,000
Civic Center.....	8,800,000
Schools.....	7,500,000
Hospitals.....	3,000,000
Fire and police stations.....	510,000
Public Library lands.....	740,000
Hall of Justice and County Jail.....	1,350,000
Hetch Hetchy Water Supply—lands and preliminary work.....	2,000,000
Docks.....	9,000,000
Streets and pavements.....	15,000,000
New parks and public playgrounds.....	1,360,000
Traffic tunnels.....	4,600,000
Private buildings.....	400,000,000
Total.....	<u>\$471,320,000</u>

Building Contracts in San Francisco

	Private	P. P. I. E.	Municipal	State	Federal	Total
1915.....	\$15,735,313	\$418,746	\$1,288,991	\$1,060,934	\$122,213	\$18,626,199
1914.....	17,385,736	4,716,497	5,927,798	2,151,726	292,700	30,468,457
1913.....	21,517,468	6,075,901	4,054,696	(1,149,194)	.....	32,797,259

Previous to 1913 figures for private building operations only were used and are exclusive of all Municipal, State, Federal and Exposition buildings.

The contracts recorded are as follows:

1912.....	\$26,269,006	1906.....	\$39,254,467
1911.....	24,495,168	1905.....	20,111,861
1910.....	22,873,942	1904.....	16,916,118
1909.....	30,411,196	1903.....	14,984,514
1908.....	35,128,549	1902.....	14,289,938
1907.....	50,499,499		

The total building contracts entered into since the fire amounted to \$311,003,665, exclusive of the work done by the municipality, the State of California, the United States Government and the Panama-Pacific International Exposition Company prior

to December 31, 1912. All buildings erected within two years after the fire cost from 25 to 30 per cent more than the original recorded contract price; since then they have cost from 10 to 15 per cent more than the original contract price. It is, therefore, conservatively estimated that the total expended for building operations carried on in San Francisco since the fire is not less than \$353,500,000, not including operations carried on by the State of California, the United States Government, the Panama-Pacific International Exposition, or the municipal government prior to December 31, 1912. There have been 61,834 building permits issued since the fire, for a total of \$280,371,158.

San Francisco, always famous for its hostelries, is now credited with being one of the greatest hotel cities in the world. Fully 98 per cent of its hotels and apartment houses have been built within the last eight years and they are nearly all thoroughly modern and up-to-date. A careful tabulation shows that San Francisco now has 487 hotels with over fifty rooms each and a total of 55,963 rooms; there are also 619 family hotels, under fifty rooms, with a total of 18,849 rooms. There are 880 apartment houses with 13,708 apartments and 41,805 rooms. The grand total of hotels and apartment houses is 1,986, and the total number of rooms is 116,617.

This exceptional hotel accommodation, together with the new Auditorium located in the Civic Center at a cost of \$1,000,000, insures San Francisco's future as a great convention city. The Auditorium has a seating capacity of 12,000.

San Francisco bears the same relation to the Pacific Coast that New York does to the nation. For the year 1915 San Francisco ranked:

- 1st in actual value of land and improvements per capita.
- 3d in average capital per national bank.
- 7th in building contracts.
- 3d in foreign imports.
- 5th in total national banking capital.
- 8th in foreign exports of domestic goods.
- 7th in bank clearings.
- 11th in number of manufacturing establishments.

Over one-half the population are savings bank depositors.

The total amount expended in the rebuilding of San Francisco is equal to the cost of the Panama Canal.

San Francisco has a lower percentage of bonded debt to the assessed valuation than any larger city in the United States.

Of the eleven principal cities of the United States, San Francisco has the lowest percentage of mortgaged indebtedness on real estate and the highest actual valuation of land and improvements per capita.

BUILDING ACTIVITIES THROUGHOUT THE STATE

As was expected, the building operations of most of the leading cities of the State showed a slight decline in 1915, as will be seen by the following table:

Valuation			Valuation		
Los Angeles	1909	\$13,260,703	Sacramento	1909	\$2,063,394
	1910	21,684,100		1910	2,164,456
	1911	23,004,185		1911	3,087,392
	1912	31,367,995		1912	2,793,544
	1913	31,641,921		1913	3,416,057
	1914	18,361,925		1914	2,329,978
	1915	11,888,662		1915	1,395,578
Oakland	1909	5,318,512	Pasadena	1909	1,888,826
	1910	6,695,789		1910	2,133,528
	1911	6,202,685		1911	2,183,713
	1912	9,009,734		1912	2,166,352
	1913	9,106,191		1913	2,787,507
	1914	5,217,520		1914	2,133,781
	1915	5,045,289		1915	1,494,349
San Diego	1909	2,632,100	San Jose	1909	1,195,280
	1910	4,005,200		1910	1,750,000
	1911	5,703,685		1911	569,369
	1912	10,001,004		1912	857,166
	1913	7,035,797		1913	485,006
	1914	3,143,321		1914	590,280
	1915	1,275,982		1915	540,407
Stockton	1909	565,195	Fresno	1909	332,897
	1910	506,494		1910	990,040
	1911	938,857		1911	1,075,941
	1912	1,129,170		1912	1,697,294
	1913	946,273		1913	1,776,666
	1914	1,117,787		1914	1,122,505
	1915	1,019,452		1915	1,051,666
Bakersfield	1913	760,744	Santa Rosa	1914	175,457
	1914	283,970		1915	157,268
		1915	174,066	Long Beach	1914	283,870
			1915		1,383,055

San Francisco Harbor

San Francisco has the largest land-locked harbor in the world.

In area the Bay of San Francisco covers 420 square miles and has a shore line, exclusive of navigable inlets, of 100 miles. The City and County (Consolidated) of San Francisco has a water frontage on the bay of 10 miles. The pierhead line is 800 feet from the bulkhead line and is fixed by the United States Government. On January 1, 1916, there was a total completed sea wall 18,690 feet in length, 36 completed piers and three planned, from 600 to 1,000 feet in length and from 100 to 200 feet in width. The total berth space of all piers is 50,000 lineal feet. The dock area of all piers is 3,672,000 square feet.

The San Francisco harbor front is owned by the State of California. The new docks and wharves are being built under a \$10,000,000 State bond issue, the interest on same and all sinking and redemption funds being paid for out of the harbor revenues. The Embarcadero, the street fronting the harbor, is also owned by the State, which operates a Belt Line Railroad over its entire length. On January 1, 1916, the Belt Line was 20,600 feet long. Freight can be unloaded directly on the freight cars on the Belt Line from the freighter alongside the dock (the Belt Line being connected with the main lines of all the transcontinental railroads and the spur tracks serving San Francisco's industrial area), so that freight can be transferred direct from steamer to warehouse or factory.

Deep water is found at all the docks and wharves on the San Francisco water front. Typhoons and hurricanes are unknown and the greatest Pacific liners dock without difficulty in any weather and at all stages of the tide. Ten fathoms is the

average depth in the bay, so that safe anchorages are obtainable at all times. A depth of six and seven fathoms is reached at the end of all the piers. The only transport docks owned by the United States are at San Francisco.

The Federal Government has made an arrangement with the Hunters' Point Dry Dock Company (on the San Francisco side) to construct a drydock 1,050 feet long, the contract for which has been let and work is now under way. This will be the largest dry dock on the Pacific Coast. The United States will have first call on this dock at all times for the docking and repairing of government vessels. Two docks are now operated at Hunters' Point, one of them being 750 feet long.

All of the passenger and freight steamers sailing from San Francisco leave from the San Francisco side of the bay, with the exception of some small lumber schooners. Direct steamer connections may be made from here to all points along the Pacific Coast of North and South America, Siberia, Japan, China, the Philippines, the Orient, Hawaii, New Zealand, Australia, Alaska, as well as services through the Canal to Atlantic Coast points and Europe.

Oakland Harbor

The work on the Oakland water front has included the deepening of a channel along the Inner Harbor by the Federal Government, upon which the sum of \$4,337,-068.35 has been expended. In addition, the city of Oakland has spent \$2,503,000. The last appropriation by the Federal Government amounted to \$98,000. This has made available along the Inner Harbor 48,120 feet of berthing space, which at the present time is 35% occupied.

Work on dredging slips, building wharves, and providing deep-water approaches to these wharves has been done and is being done by the Santa Fe and Southern Pacific Railways, and the Santa Fe has just completed a new \$1,500,000 freight terminal at the foot of Alice Street in Oakland, on the Inner Harbor. They have at that point more than 30 acres of water front property close to the heart of the city.

The city of Oakland has just completed a quay wall 2,000 feet long, extending from the foot of Clay Street to Myrtle Street, where approximately \$800,000 has been spent. The wall is 22 feet thick at the base and 8 feet at the top. It has 27 feet of water in front of it at low tide. Railroad tracks and modern fireproof warehouses have been constructed on it, while modern water and oil systems supply the ocean vessels. Coal bunkers are located at the west end of the wall and a high-pressure salt water system for fire protection runs along First Street 300 feet distant. This means an ideal water terminal in the center of the wholesale and manufacturing district, and within walking distance of the center of the city.

There are three large shipbuilding plants along the Inner Harbor, and many smaller ones.

On the western water front, in what is known as the Key Route Basin, the city of Oakland has paved the way for the development of a great terminal. It owns 294 acres of tide lands, and has expended more than \$500,000 in getting them ready for use. This project immediately adjoins the Southern Pacific Oakland Pier project, where that railroad is constructing a great water terminal.

Lieutenant-Colonel Thomas H. Rees, of the United States Army Engineers, has prepared plans for a continuous deep-water channel along the east bay shore from Oakland Pier to Point Richmond, which has the endorsement of the organizations in the cities interested, and which will be of great importance in the future development of the many miles of water front centering at Oakland.

Richmond Harbor

There is under way in Richmond, manufacturing and shipping city, eight miles across the bay from San Francisco, one of the largest pieces of harbor development work ever undertaken by a city of the size and age of Richmond, which only began its

career in 1901 and now has 22,000 population, having been incorporated as a city but ten years.

The project consists of an Inner Harbor with a channel to deep water, a projecting arm and a tunnel and roadway through the rim of hills skirting the natural deep water frontage of the city, the tunnel and road to connect with a wharf 740 feet long at the outer end of the harbor channel and provide immediate use of this much of the new project while the rest is under construction.

The tunnel and highway to the entrance channel of the new harbor are completed and the big initial wharf is two-thirds finished. All the work done represents the highest class of construction in this line. The tunnel is of concrete, the highway is paved with asphalt and the wharf is being constructed with concrete piling and every modern freight handling device. This part of the project will cost about \$600,000.

Richmond's project has been approved and accepted by the United States Army Board of Engineers for Rivers and Harbors at Washington with accompanying recommendations to the Secretary of War for \$425,000 as a preliminary appropriation. The Secretary of War has made similar recommendation to Congress and that body, through its committee, included \$100,000 in the Rivers and Harbors Bill to start the project. War conditions have blocked Government aid for new projects to this time, but assurances come from Washington that Richmond will get its first \$100,000 as soon as new projects are included.

Dredging has been carried along on the inner part of the new harbor. The work that is being done will be met by an equal amount on the part of the Government. More money will be asked from the Federal treasury as the city proceeds with construction and more bonds will be voted by the city.

The total cost of the new harbor, which extends, including the main channel, from a point beyond the Santa Fe wharves, to Point Isabel, in the vicinity of Stege Station, will be something like \$4,000,000.

The depth of the main harbor will be 24 feet at the beginning with a final depth of 30 feet.

Los Angeles Harbor

The Port of Los Angeles (San Pedro) is a broad harbor, protected by a great break-water more than two miles long, which was built by the U. S. Government at a cost of \$3,000,000. This is the Outer Harbor. Extending half a mile into this protected harbor are solid earth-filled piers with wharves, some of which are the best that engineering skill could devise. There are now more than one and one-half miles of these wharves built in the Outer Harbor, with from thirty to thirty-five feet of water in front of them.

The channel leading from the Outer Harbor to the Inner Harbor is 400 to 900 feet wide, with a depth of 30 feet at low tide, extending two and one-half miles to a turning basis 1,600 feet in diameter. This channel is lined with wharves along most of its length. In the Inner Harbor are over 20,000 feet of channels 200 feet wide and 20 to 34 feet deep.

In the last five years Los Angeles has voted \$5,500,000 for harbor improvements and it stands pledged to spend a total of \$10,000,000 by 1919, the U. S. Government having expended about \$5,600,000 since 1871.

The net tonnage of vessels entering the harbor increased from 356,371 tons in 1902 to 2,759,274 tons for the fiscal year ending June 30, 1914—just before the opening of the Canal. The total tonnage of all commodities, exclusive of lumber, for the fiscal year 1914 amounted to 1,682,794 tons, with a value of more than \$80,000,000. The opening of the Panama Canal has greatly increased this tonnage, especially of general merchandise.

There are now completed over 6,000 feet of municipal wharves, with others contemplated. There are completed over 3,800 feet of freight sheds, 100 feet wide,

together with necessary rail terminals and paved streets. There are also 9,625 feet of wharves operated by railroad companies, 9,060 feet operated by private wharf companies, and 6,160 feet by lumber companies.

San Diego Harbor

The Bay of San Diego has an area of 22 square miles, is completely land-locked, and has a depth of water over the bar, at low tide, of 39 feet. The main channel inside the bay will average from 1,500 to 2,000 feet in width and from 35 to 70 feet in depth at low water. By act of the State Legislature, May 1911, the City of San Diego was granted absolute control of its water front and the tide-lands adjacent thereto. This generous gift was granted upon the condition that the city expend \$1,000,000 for harbor improvements. These improvements have been completed and a further sum added for construction purposes amounting to \$400,000. The pier is 130 feet in width and 800 feet in length and on this they have built a steel warehouse and a concrete administration building. There is also a bulkhead 2,675 feet long, by the aid of which 70 acres has been reclaimed, having a value in excess of the total cost of the project. The city, by these improvements, also secured control of 1,460 acres of tide-lands. These lands lie adjacent to the city and constitute its water front about 11 miles in extent. This stupendous asset is perhaps possessed by no other port in the world.

The rapid increase in the size of ships, both merchant and naval, will eliminate within a few years all but the most capacious ports. Ships of 1,000 feet in length, 100 feet beam and 35 feet draft will be common, and there are but three harbors on the Pacific Coast capable of accommodating such vessels, viz., San Diego, San Francisco and Puget Sound. These three are located on a coast line of 1,300 miles and not one of them is within 500 miles of the other. The importance of these ports is therefore self-evident.

Eureka Harbor

Humboldt Bay, a beautiful body of water at the very doors of the town, is fourteen miles long and from half a mile to four miles wide. It is traversed by twenty-one miles of lineal channel. It is protected by two peninsulas of low sand dunes—one from the north and one from the south.

Being so completely land-locked, this harbor is of the utmost importance to a coast so barren of good harbors as is the Pacific; but its usefulness has in the past been seriously impaired by shifting sand bars which obstructed its entrance, and by the shallowness of some of its inner channels. In 1889 the general government began improving the entrance to the harbor by extending two jetties of rock, one on each side of the channel, so as to confine the waters to a permanent way. This work was completed in September, 1899, at a cost of more than two millions of dollars.

A survey made in 1903 showed the least depth of water in the channel to be in excess of 30 feet at low tide; by 1905 this had decreased to 27 feet; and in September 1907, a survey found the channel depth reduced to 22½ feet, and led the engineers to recommend the restoration of the jetties at an estimated cost of \$1,037,400. In 1910, Congress adopted this project, and appropriated \$150,000 for the first year's work. In 1911, \$170,000 was appropriated, and the project placed upon the continuing contract list, insuring its completion. The work was begun in 1912, and by July 30, 1915, the south jetty was fully reconstructed, and work was begun on the north jetty, August 1, 1915. The original estimated amount has been appropriated and used, and in 1914, \$200,000 additional was allotted, and for 1915, \$300,000 was granted. Doubtless the total cost of this reconstruction will be over \$2,000,000. The depth of water in the channel is now over 26 feet at low tide.

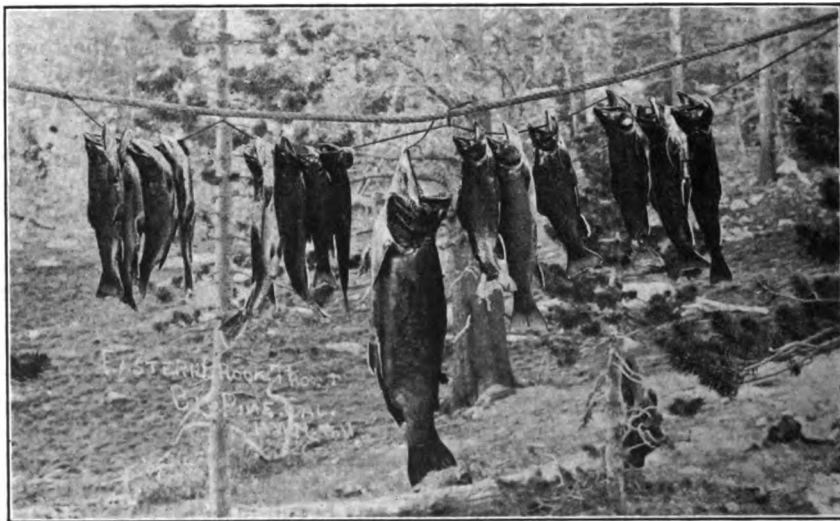
An average of nearly 1,000 vessels arrive and depart from this harbor annually, and the value of their outgoing cargoes averages over \$10,000,000, while the incoming shipments are about 75% of that amount. The foreign export shipments are confined almost entirely to redwood lumber, the amount so shipped in 1915 being 23,000,000 feet, valued at \$602,000.

Monterey Harbor

Monterey Bay is one of the largest of the coast, being over twenty miles in width at the mouth, ten miles inland, and in shape resembling a horseshoe. It has no bar at the entrance and ships drawing from 45 to 50 feet of water can steam in and drop anchor without the aid of a pilot. It is the natural outlet for the great San Joaquin Valley with its 11,000,000 acres of rich land. Several projects are now under way to connect this valley with Monterey by rail. According to the United States Engineers, the undertow in the harbor is the only defect. This causes ships to chafe against the piers. To remedy this, however, the State and National Governments have appropriated \$800,000; contingent upon the above mentioned railroad being built. It has at present an annual tonnage exceeding 800,000 tons.

Santa Cruz Harbor

Santa Cruz, noted as a seaside resort, is not on the ocean coast, but nestles in behind Light-house Point, on the shore of Monterey Bay. In a semicircle behind the city lie the beautiful Santa Cruz Mountains. The bathing beach is nearly a mile long and slopes gradually from the famous beach buildings out into the bay. In years past a small coasting steamer touched occasionally at Fisherman's Wharf, which does not extend out far enough to make landings safe. The new Municipal Wharf, which has just been completed, reaches out into the bay over a half mile and already two lines of steamers are making regular trips from both north and south. Many tons of general merchandise are being handled over the new wharf as well as thousands of tons of cement, lime, canned goods and other products shipped from the place on special steamers.



Eastern brook trout from California Streams.

Courtesy of Fish and Game Commission.

CLIMATOLOGICAL DATA FOR 1915

(Table from Annual Summary, California Section, Weather Bureau Record, 1915, by George H. Willson, Forecaster.)

Stations	Counties	Elevation feet	Temperature Degrees Fahrenheit		Precipitation Inches		Rainy days	Sky			Type of Country
			Annual Mean	High- est	Low- est	Total for year	Total snow- fall	Clear days	Partly cloudy days	Cloudy days	
Independence	Inyo	3907	55.6	98	10	3.00		232	98	35	Mountain and high plateau
Hornbrook	Siackyou	2154	53.0	101	12	19.75	3.0	185	81	99	Mountain and high plateau
Alturas	Modoc	4400	48.8	103	-10	9.98	31.5	153	118	89	Mountain and high plateau
Dunsmuir	Siackyou	2285	56.0	105	18	65.30	36.5	103			Mountain and high plateau
Quincy	Plumas	3400	45.7	98	6	29.13	47.5	204	61	100	Mountain and high plateau
Summit	Placer	7017		82	-2	43.15	398.5				Mountain and high plateau
Tamara	Alpine	9000				37.10					Mountain and high plateau
Yosemite	Mariposa	3945			10	35.51	83.3	208	49	108	Mountain and high plateau
Redding	Shasta	552	62.1	111		57.96	T	207	64	94	Sacramento and San Joaquin valleys
Red Bluff	Tehama	307	62.1	110	28	36.15	75	218	79	68	Sacramento and San Joaquin valleys
Orland	Colusa	254	63.0	112	29	28.07	0	218			Sacramento and San Joaquin valleys
Colusa	Colusa	60	60.1	105	23	19.59	0	223	64	73	Sacramento and San Joaquin valleys
Sacramento	Sacramento	71	60.4	105	24	17.74	0	233	56	76	Sacramento and San Joaquin valleys
Stockton (S. H.)	San Joaquin	23	60.4	100	24	17.04	0	256	37	72	Sacramento and San Joaquin valleys
Merced	Merced	173	61.4	108	21	12.65	0	208	59	68	Sacramento and San Joaquin valleys
Fresno	Fresno	283	63.4	109	24	11.65	0	195	38	132	Sacramento and San Joaquin valleys
Bakersfield	Kern	404	64.0	115	26	9.04	T	231	52	82	Sacramento and San Joaquin valleys
Oroville (near)	Butte	250	61.9	110	21	39.36	3.0	221	52	82	Sacramento and San Joaquin valleys
Nevada City	Nevada	2850	55.0	101	12	60.24	15.5	235	18	112	Foot hills Sacramento and San Joaquin valleys
Rocklin	Placer	249	59.8	108	25	41.07	2.0	211	81	75	Foot hills Sacramento and San Joaquin valleys
Placerville	El Dorado	1875	55.5	100	20	27.63	0				Foot hills Sacramento and San Joaquin valleys
Lemon Cove	Tulare	600	64.5	112	28	14.17	0				Foot hills Sacramento and San Joaquin valleys
Reedley	Fresno	347	61.7	109	27	13.67	0	201	15	149	Foot hills Sacramento and San Joaquin valleys
Caliente*	Kern	1200	62.0	108	28	28.37	0	91	112	163	Sea coast
Eureka	Humboldt	64	52.4	72	28	39.79	0	118	80	167	Sea coast
Point Reyes	Marin	490	52.7	77	34	24.55	0	253	65	17	Sea coast
San Francisco	San Francisco	207	57.4	86	36	24.17	0	264	59	43	Sea coast
Monterey*	Monterey	15	60.5	98	34	21.43	0	212	106	47	Sea coast
Santa Barbara	Santa Barbara	130	61.4	91	38	13.63	0	173	127	65	Southern California
San Diego	San Diego	87	63.0	99	38	16.67	0	212	121	33	Southern California
Los Angeles	Los Angeles	283	63.3	108	27	15.80	T	173	121	33	Southern California
Riverside	Riverside	851	63.0	104	26	25.25	0	197	61	107	Southern California
Redondo	San Diego	667	60.8	104	26	20.54	T	240	5	120	West of Coast Range
Redlands	San Bernardino	1352	62.4	105	27	20.54	T	190	65	110	West of Coast Range
Santa Rosa	Sonoma	181	56.2	103	18	42.30	1.5	214	38	113	West of Coast Range
Mt. Tamalpais	Marin	2375	54.9	92	23	31.54	8.0	208	68	89	West of Coast Range
Lick Observatory	Santa Clara	4209	52.0	90	14	25.77	0	216	57	92	West of Coast Range
San Jose	Santa Clara	95	53.2	97	23	21.72	T	225	37	96	West of Coast Range
Hollister	San Benito	284	56.9	97	22	17.10	0	243	64	53	West of Coast Range
Los Gatos	Santa Clara	600	58.3	101	17	38.81	0	257	82	26	West of Coast Range
Paso Robles	San Luis Obispo	800	58.8	100	25	23.56	0	327	16	23	Southeastern California
Ojai Valley	Ventura	900	60.9	104	26	5.71	0	271	84	10	Southeastern California
Palm Springs*	Imperial	584	71.0	114	28	2.76	0				
Calxico	Riverside	0	71.2	117	28	5.10	0				
Mecca	Riverside	-185	70.6	117	24		0				

*T—Indicates trace of precipitation.

*Temperatures from observed readings.

SHIPMENTS OUT OF STATE BY RAIL OF FRUITS, WINE, BRANDY AND VEGETABLES

Tons of 2,000 Pounds.

Kinds	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910 By rail	1911 By rail	1912 By rail	1913 By rail	1914 By rail	1915 By rail
Green deciduous fruits.....	91,176.5	98,673.7	100,390.9	101,198.7	73,983.6	115,083.6	113,679.0	106,066.0	161,224.0	203,275	204,876	187,884	167,603.9	186,398	212,806	264,155
Citrus fruits.....	228,546.6	323,871.4	225,668.8	299,623.4	385,747.6	454,063.4	383,418.9	413,696.1	399,094.0	476,959	446,394	580,799	479,098.8	238,222	561,136	561,087
Dried fruits.....	90,052.8	106,987.1	151,944.5	149,531.1	156,766.3	118,479.3	112,176.9	194,821.6	133,946.0	154,756	128,892	114,433	194,175.2	111,783	93,014	169,739
Raisins.....	36,047.0	43,314.0	47,575.2	39,963.4	51,134.7	32,634.7	42,457.3	.....	29,610.0	61,594	67,278	46,513	.....	39,279	47,088	71,023
Nuts and olives.....	6,518.4	8,462.4	10,918.9	9,377.4	9,810.5	7,610.5	5,131.5	7,198.0	10,867.5	12,438	12,308	12,751	15,399.1	11,611	9,832	18,766
Canned fruits and vegetables.....	75,556.9	83,229.1	80,634.8	94,204.8	86,077.9	91,877.9	77,628.5	104,624.6	85,135.0	71,223	73,746	83,268	89,946.1	106,998	65,245	115,178
Raw vegetables.....	.....	.....	.....	.....	.....	.....	.....	.....	93,500.8	86,014	78,829	130,659.6	147,277	247,512	331,941	.....
Wine and brandy.....	.....	.....	.....	.....	.....	.....	.....	.....	70,753.2	75,666	83,144	83,062	93,249.8	83,012	53,086	52,276

Carloads 10 Tons Each

Total carloads fresh, dried and canned fruits and vegetables and wines and brandy.

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
1907.....	48,072	.....	.....	.....	.....	.....	88,035	.....	.....	.....	.....	.....	120,890
1908.....	56,149	.....	.....	.....	.....	.....	92,033	.....	.....	.....	.....	.....	109,456
1909.....	55,483	.....	.....	.....	.....	.....	90,409	.....	.....	.....	.....	.....	116,367
1910.....	66,798	.....	.....	.....	.....	.....	90,537	.....	.....	.....	.....	.....	118,913
1911.....	83,732	.....	.....	.....	.....	.....	85,399	.....	.....	.....	.....	.....	92,457
1912.....	77,538	.....	.....	.....	.....	.....	88,604	.....	.....	.....	.....	.....	126,010
1913.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	156,415

The figures for 1912-15 were reported by the Southern Pacific, Santa Fe and Western Pacific lines. Previous to 1912 the figures reported were from the Southern Pacific and Santa Fe only.

Lack of uniformity in classification of some kinds of products by the several roads prevents their segregation more specially in this table. For instance, in some cases "dried fruits" are made to include prunes and raisins to comply with the economics and methods of account of the freight offices.

Previous to 1910, shipments of fruits, vegetables, etc., by rail and sea were not segregated. The pack of canned fruits and vegetables is given on another page.

Dairy and poultry products, fresh and canned fruits and vegetables taken on at this port as supplies and not included above, reach a value of about \$1,650,000.

The three railroad lines mentioned above report that they brought into California, during 1915, 58,852 tons of poultry and eggs, and 1,867 tons of dairy products.

CITRUS FRUITS

The citrus industry in California, according to Mr. C. B. Messenger of the "California Cultivator," represents approximately \$200,000,000 capital invested, 13,000 or 14,000 growers, and a vast army of laborers who depend upon this industry for a livelihood. According to the 1915 report of the California State Commission of Horticulture, there were 112,926 acres of bearing orange trees and 55,527 non-bearing; of lemons, there were 18,442 acres bearing and 18,228 non-bearing.

According to the statistics compiled by the Citrus Protective League, the shipments of citrus fruits for the season 1914-15 were 1,736 cars below those of 1913-14, which was the biggest season on record. While the last lemon crop was the largest California has ever produced, the orange crop was smaller than that of the preceding year.

The record of shipments for the last fifteen years is as follows:

Shipments of Citrus Fruits from California

Season	CARS		
	Oranges	Lemons	Total
1900-01.....			24,900
1901-02.....			19,180
1902-03.....			23,871
1903-04.....	26,160	3,239	29,399
1904-05.....	26,044	5,378	31,422
1905-06.....	23,697	3,913	27,610
1906-07.....	26,313	3,507	29,820
1907-08.....	27,770	4,959	32,729
1908-09.....	34,320	6,196	40,516
1909-10.....	28,317	4,782	33,099
1910-11.....	39,630	6,764	46,394
1911-12.....	34,329	5,961	40,290
1912-13.....	15,893	2,192	18,085
1913-14.....	45,594	2,954	48,548
1914-15.....	39,744	7,068	46,812

The total value, estimated, of all citrus fruits shipped from California in the last fiscal year ending August 31, 1915, is \$31,189,886.

Shipments of Citrus Fruits from Different Sections

	Season 1912-13 Cars	Season 1913-14 Cars	Season 1914-15 Cars
Oranges from Southern California.....	13,574	39,024	33,317
Oranges from Central and Northern California.....	2,913	2,954	6,427
Lemons from California.....	2,192	6,570	7,068
Total.....	18,085	48,548	46,812

From the report of Mr. G. Harold Powell of the California Fruit Growers Exchange, we find that the California lemon crop increased 132% over the crop of the preceding year. The wholesale and retail prices of lemons have been unusually low owing to the fact that the weather was abnormally cool throughout the United States and also to the extensive importation of Italian lemons. There are 20,000 acres of lemons in California (four years old or under) which will soon come into bearing and will double the domestic supply.

The following table shows the supply of lemons in the United States for three five-year periods and the estimated supply for 1914-15; the years end on June 30th.

5-year average	Imports tons	California shipments tons	Total tons	Increase over last 5 years
1900-04.....	78,750	28,620	107,370	.....
1905-09.....	74,531	52,963	127,494	18.8%
1910-14.....	80,942	63,812	144,754	13.5
1914-15.....	80,803	70,086	150,889	8.4

DECIDUOUS FRUIT IN CALIFORNIA

The last report of the State Horticultural Commission gives the acreage of deciduous fruit trees in 1915 as follows: Peach, 144,888; apricot, 55,451; apple, 60,840; pear, 37,428; plum, 22,161; cherry, 12,462; fig, 8,122.

The total production in 1915 can only be approximated. The three leading railroads report shipments of 16,778 carloads. In the table below the figures are for actual carloads, without regard to the number of tons in a car. The minimum fixed by the railway companies is thirteen tons to a carload, but a carload is often thirty tons. In bringing together figures from different sources, it should be borne in mind that some authorities use the ten-ton limit, while others count actual carloads. The following figures are supplied by "The California Fruit News," which is one of our most reliable sources of information:

Fresh Deciduous Fruit Shipments from North of Tehachapi, in Actual Carloads

Variety	1907	1908	1909	1910	1911	1912	1913	1914	1915
Apricots.....	71	231½	208¼	289¼	223½	195½	158¼	382	392
Cherries.....	98	208¼	249¼	250½	216¼	244¼	230¾	166¼	205
Grapes.....	3,460	3,818½	5,875	4,947½	6,374½	6,357½	6,363¼	8,773	9,564
Peaches.....	699	1,980¼	2,599	2,517¼	2,027	1,621¼	2,359	2,144¼	1,689
Pears.....	1,039	2,701½	2,638	2,361	2,324¼	3,134½	2,459¾	2,725¼	2,645
Plums.....	1,039	1,763	1,526¼	1,552½	1,366	1,775½	1,706¼	1,906¼	2,225
Sundry.....	.....	.....	20¼	17	16¼	15¼	18½	49	58
Apples (below)	1,085	2,216	.....	.....	.....	.....	.....	.....	.....
Total carloads	7,491	12,917	13,117	11,936	12,548¼	13,343¼	13,331¼	16,146¼	16,778

Total fresh deciduous fruit shipments from south of Tehachapi in 1915 amounted to 1,050 cars, aggregating about 22,000 tons.

Apples

The above table of shipments does not include the apple production of 1914-15. The report of Mr. George P. Weldon, Chief Deputy, State Horticultural Commission is 38,410 acres in bearing and 22,430 acres non-bearing. The apple crop for 1915 is estimated by the United States Department of Agriculture as 1,563,000 barrels or 3,907,500 bushels.

According to the "California Fruit News" it is estimated that the output of dried apples for 1915 amounted to 4,000 tons.

The number of trees in 1915, as given by the State Board of Equalization, was 2,177,233 bearing and 2,120,883 non-bearing. The leading counties according to the latter report were: Santa Cruz, 630,544; Sonoma, 247,860; Monterey, 125,000; Humboldt, 108,000; San Bernardino, 102,400.

Sebastopol's shipment of apples was about 475 cars of 600 boxes each. About 90% of the packed apples (Gravensteins) went to Eastern and foreign markets, but the late varieties were practically all marketed in California, only a few cars going East on account of competition with the Northwestern States. The Sebastopol Apple Growers' Union also reports the following: Apples dried, green weight, estimated, 6,000 tons; canned apples, 300 tons; apples made into cider and vinegar, 150 tons.

Output of Cured Fruits, including Prunes and Raisins

("California Fruit News")

	1910 Tons	1911 Tons	1912 Tons	1913 Tons	1914 Tons	1915 Tons
Apples.....	3,000	3,500	3,600	1,900	4,500	4,000
Apricots.....	15,250	11,000	20,000	10,500	20,500	17,000
Figs.....	3,775	5,500	5,000	5,000	6,500	8,600
Peaches.....	25,000	14,000	30,000	23,000	37,000	29,000
Prunes.....	40,000	95,000	102,500	48,000	56,000	84,000
Raisins.....	62,500	65,000	95,000	65,000	98,000	125,000
Various other.....	1,750	3,750	3,000	2,000	2,500	2,000
Total tons.....	151,275	197,750	259,100	155,400	225,000	269,600

Prunes

Next to raisins (the figures for which are given on another page under the heading of grapes), prunes are most important in the list of dried fruits. While they are grown commercially in about one-half of the counties of the State, the principal center of the industry is in Santa Clara County, which last year reported 5,420,000 bearing trees. The total number of bearing trees in the State, as given by the State Board of Equalization, was 8,348,611 and 1,422,760 non-bearing trees. The value of the 1915 crop has been roughly estimated at \$6,720,000, figured on a 4c basis.

CALIFORNIA PRUNE OUTPUT, 1898-1915.

Year	Tons	Year	Tons
1898.....	45,210	1907.....	53,000
1899.....	56,863	1908.....	28,500
1900.....	87,000	1909.....	77,500
1901.....	40,800	1910.....	45,000
1902.....	98,500	1911.....	88,000
1903.....	82,500	1912.....	97,000
1904.....	67,500	1913.....	45,000
1905.....	31,250	1914.....	56,000
1906.....	92,500	1915.....	84,000

VEGETABLES IN CALIFORNIA

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

Complete statistics are not available, there being no accurate data with regard to the amount of fresh vegetables supplied to the home markets. The shipments of fresh vegetables to Eastern markets in 1914 amounted to about 247,512 tons, and these shipments are increasing year by year.

Principal Vegetable Districts

Asparagus.....Delta Region, Los Angeles, Alameda.
 Cabbage.....Los Angeles, San Francisco, San Jose.
 Cauliflower....Los Angeles, San Francisco and Alameda.
 Celery.....Los Angeles, San Francisco, Stockton.
 Melons.....Los Angeles, Stockton.
 Potatoes.....Delta Region, Los Angeles, San Francisco and Alameda.
 Tomatoes.....Los Angeles, Delta Region, Alameda.
 Onions.....San Jose, San Francisco, Delta Region and other points.
 Artichokes....Los Angeles, San Jose and other points.
 Lettuce.....Los Angeles, San Jose and other points.
 Rhubarb.....Alameda, Sacramento Valley, San Joaquin Valley, Central California.

Asparagus

Information furnished by Mr. Edgar Allen Forbes,
 Secretary, State Commission Market.

Asparagus can be grown in every county in California. Commercially it is grown as an adjunct of a majority of market gardens, their output being marketed locally. No records are available of this production, but in the aggregate it amounts to considerable.

In the Imperial Valley quite a large acreage has been planted to Asparagus of the green or palmetto variety. As yet the fields are not in full bearing, although there has been considerable from that locality shipped to both Southern California and Eastern markets. The season of the same is about ten days earlier than that of Northern California. As yet the production has not assumed proportions sufficiently large to warrant specializing in Railroad and Express companies' records, consequently no figures are available as to output.

The great production of the State comes from the deltas of the Sacramento and San Joaquin Rivers. Here some 35,000 acres are devoted to Asparagus culture.

The known production of Asparagus in California for the season of 1915 was approximately as follows:

Received at San Francisco.....	18,802,800 lbs.	
Less cannery purchases San Francisco.....	6,749,400	
Less shipped from San Francisco.....	2,292,400	9,041,800
		9,761,000 lbs. 17%
Freight and express shipments to State points.....	1,060,000 lbs.	02%
Freight and express shipments to Eastern points.....	9,000,000 "	16%
Absorbed by canneries.....	39,670,405	65%
Total production.....	59,491,405	100%

This production netted the growers about 2-7/10 cents per pound, or \$1,100,000.00, the greater part of which came from points outside of the State as representing consumption of Eastern shipments and the canned product, most of the latter being shipped outside of the State.

Production has just about kept pace with the consumption. The demand for both the fresh and canned is susceptible of almost unlimited growth. With systematic promotion the demand can readily be greatly increased as can also the acreage and production.

The Eastern market demands a "green" Asparagus and the bulk of shipments are accordingly made of the "Palmetto" or green variety.

Eastern shipments of California Asparagus for the season of 1915 were as follows:

	In carload lots		In mixed carloads	
	No. cars	Pounds	No. cars	Pounds
By express.....	72	1,440,000	4	80,000
By freight.....	357	7,140,000	17	340,000
Total.....	429	8,580,000	21	420,000
Grand total.....	450	9,000,000 pounds.		

This was destined:	Chicago	New York
Express shipments.....	152,000 pounds	1,368,000 pounds
Freight shipments.....	1,496,000 "	5,984,000 "

The first shipment of the season reached New York February 25th and was sold at \$15 to \$20 per dozen bunches of 2½ pounds each. This shipment was the first asparagus in the Eastern market outside of a very insignificant quantity grown under glass.

POTATOES IN CALIFORNIA

According to the report of Mr. W. F. Bailey of the State Commission Market, the production of potatoes in the State for 1915 was as follows:

Total number of acres.....	80,000
Total yield—Sacks.....	5,612,400

This shows an average of 70.15 sacks per acre.

The following table shows how potato production is distributed over the State:

Delta District.....	44,000 acres @ 80 sacks	3,520,000 sacks
Salinas District.....	3,360 acres @ 60 sacks	201,600 sacks
Watsonville District.....	2,160 acres @ 75 sacks	162,000 sacks
San Francisco District.....	5,000 acres @ 50 sacks	250,000 sacks
Los Angeles District.....	10,000 acres @ 55 sacks	550,000 sacks
Balance of State.....	15,480 acres @ 60 sacks	928,800 sacks

This report also shows that this State does not produce enough potatoes for local use, as we import from other States 1,375,159 sacks, as follows:

From Oregon and Washington by water per Custom House records.....		71,659 sacks
From Oregon and Washington by rail, partially estimated.....	2,000 cars	540,000 sacks
From Idaho, by rail, partially estimated.....	1,500 cars	517,500 sacks
From Nevada, by rail, partially estimated.....	300 cars	81,000 sacks
From other states, by rail, partially estimated.....	500 cars	135,000 sacks

	By Rail	6,957,559 sacks
From other sources.....		154,953 sacks

Total handled in California markets.....	7,112,512 sacks
--	-----------------

This crop added approximately \$7,857,360.00 to the wealth of the State in 1915.

Mr. T. A. Burns, of the San Francisco Fruit Distributors, gives the following figures for sweet potatoes and onions:

Sweet potatoes.....	1,375,000 crates, value \$1,400,000
Onions.....	2,322,000 sacks, value 3,100,000

Celery

The "California Vegetable Union" reports that in Southern California there were about 1,000 acres of celery harvested during the season 1915-16. The production amounted to 600 carloads. In Northern California there were harvested about 2,000 carloads, or a total of 2,600 carloads for this season. Celery brought the highest price during the year 1915 ever known in the history of the industry and averaged about \$350 net a car to the growers. In round figures this was about a million dollar crop this year.

Orange County reported a chili pepper crop valued at \$875,000 in 1915.

Beans and Lima Beans

While exact statistics are difficult to obtain, leading authorities estimate the total value of the 1915 bean crop in California at approximately \$13,000,000. One leading authority gives the following classification:

	Quantity bags	Farm value
Lima beans (80-lb bags)	1,815,000	\$6,000,000
Small whites	750,000	3,000,000
Black eyes	320,000	1,000,000
Pink beans	750,000	2,500,000
	3,670,000	\$12,500,000

Partial List of Vegetable Crops, 1915

Beans, bags	3,670,000	\$12,500,000
Sugar beets, tons (paid growers—estimated)	203,200	17,062,500
Onions, bags	2,322,000	3,100,000
Potatoes, Irish, bags	5,612,400	7,857,360
Potatoes, sweet, crates	1,375,000	1,400,000
	13,182,600	\$41,919,860

THE CANNING INDUSTRY IN CALIFORNIA

California Canning Season

(J. K. Armsby Co.)

Approximate Period of Packing the Different Varieties.

Fruits.

Apricots	Latter part of June to latter part of August.
Blackberries	Latter part of June to fore part of September.
Cherries	Latter part of May to middle of July.
Currants	Last three weeks of June.
Gooseberries	Latter part of May to latter part of June.
Grapes	Fore part of September to end of October.
Nectarines	Latter part of July to fore part of September.
Pears	Latter part of July to latter part of September.
Peaches, Free	Latter part of July to middle of October.
Peaches, L. C.	Latter part of July to middle of October.
Peaches, W. C.	Middle of August to middle of October.
Plums, Green Gage	Middle of July to middle of September.
Plums, Egg	Middle of July to middle of September.
Plums, Golden Drop	Fore part of August to fore part of September.
Plums, Damson	Latter part of August to latter part of October.
Quinces	Middle of September to middle of November.
Strawberries	Fore part of May to latter part of October.

Vegetables.

Asparagus	Latter part of March to middle of June.
String beans	Middle of June to end of November.
Peas	Middle of May to latter part of June.
Tomatoes	Latter part of August to latter part of November.

Canned Fruit and Vegetable Packs

Year	Fruits cases	Vegetables cases	Year	Fruits cases	Vegetables cases
1900	2,775,896	803,617	1908	4,734,663	1,501,885
1901	2,677,072	1,076,058	1909	3,047,001	1,242,720
1902	2,252,790	1,151,268	1910	4,008,549	2,250,645
1903	2,733,504	1,343,574	1911	4,182,650	2,516,655
1904	2,839,733	961,783	1912	4,833,900	2,789,495
1905	3,283,296	1,192,455	1913	4,194,525	2,192,330
1906	3,109,225	1,747,595	1914	5,968,875	3,028,255
1907	2,982,955	1,941,755	1915	4,969,548	2,373,182

Canned Fruit and Vegetable Pack

(Copyright, 1916, by Howard C. Rowley, editor "California Fruit News," of March 25, 1916.)

Fruits—	1915 Cases		1914 Cases		1913 Cases	
	No. 2½, 3 and smaller (all grades)	Gallons (all grades) number of dozens	No. 2½, 3 and smaller (all grades)	Gallons (all grades) number of dozens	No. 2½, 3 and smaller (all grades)	Gallons (all grades) number of dozens
Apples.....	3,050	39,285	9,185	84,225	2,305	29,230
Apricots.....	703,550	138,820	949,475	192,880	714,970	183,910
Blackberries.....	41,595	64,170	24,080	59,790	27,370	48,040
Cherries.....	155,690	13,535	97,235	8,930	150,215	12,450
Grapes.....	66,480	5,565	43,210	6,475	35,215	6,450
Loganberries.....	11,913	13,323	10,900	5,000	12,465	3,270
Pears.....	749,200	39,215	749,425	56,315	488,370	41,490
Peaches, free.....	502,875	164,500	684,050	204,075	523,475	245,275
Peaches, cling.....	1,891,100	258,275	2,325,275	296,380	1,508,500	121,300
Plums.....	66,585	14,315	89,400	21,040	52,770	13,206
Raspberries.....	3,430	815	3,890	580	5,165	425
Strawberries.....	4,997	2,820	16,140	1,985	8,465	790
Other fruits.....	7,475	6,980	17,305	11,560	7,675	1,730
Total fruits.....	4,207,930	761,618	5,019,630	949,245	3,536,960	657,565
Grand total fruits (cases).....						4,194,525
Vegetables—						
Asparagus.....	790,900	9,480	762,035	6,775	716,650	6,350
Beans, string.....	65,590	16,315	67,860	9,205	83,255	6,935
Peas.....	167,935	20,732	149,320	12,775	86,970	6,900
Tomatoes.....	1,021,325	161,380	1,680,950	212,700	989,550	157,010
Other vegetables.....	93,400	26,125	103,855	22,780	103,365	35,345
Total vegetables.....	2,139,150	234,032	2,764,020	264,235	1,979,790	212,540
Grand total vegetables (cases).....						2,192,330
Grand total pack (cases).....						6,386,855

GRAPES AND RAISINS

California is the most important factor in viticulture in the United States. It has over 90,000,000 vines, more than all the rest of the United States. It represents an investment of \$150,000,000, which returns an annual income to the grower of over \$20,000,000. Over 100,000 people are dependent upon California's viticultural industry. This includes 15,000 heads of families that own vineyards, 700 wine-makers, and the laborers who do the picking and hauling, besides those employed in the wineries and those engaged in cultivating and handling our raisin and table grapes.

According to the 1914-15 report of the State Viticultural Commission 355,000 acres were devoted to grape growing in the spring of 1915. Of the total, 55,000 acres were devoted to table grapes, 130,000 to raisin grapes, and 170,000 to wine grapes.

Table Grapes

During the season of 1915 we find that there were shipped from California to Eastern markets a total of 9,557 carloads of table grapes including all varieties. This record of shipments is furnished by the railroads and covers the total shipments from California by all shipping concerns.

From figures furnished the California Grape Protective Association by the Stewart Fruit Company, it is estimated that 9,557 cars realized a total gross sale of approximately \$11,000,000 in Eastern markets. The charges per car to be deducted from this gross sale are approximately as follows:

Commission @ 7%	\$80.50
Freight @ \$1.15 per 100 lbs.	299.00
Refrigeration	75.00
Packing and loading charges @ 25c	232.50
Total	\$687.00

This would make a total deduction for freight, refrigeration, packing and commission, \$6,565,659.00, leaving net to the producer \$4,434,341.

California Raisin Crop

The center of the raisin industry is in Fresno County, although raisin grapes are grown in twenty-two counties of the State.

Year	Tons	Year	Tons
1897	46,852	1906	47,500
1898	40,365	1907	60,000
1899	35,784	1908	60,000
1900	47,167	1909	70,000
1901	37,125	1910	56,000
1902	54,375	1911	67,500
1903	60,000	1912	85,000
1904	37,500	1913	65,000
1905	43,750	1914	90,000
		1915	124,000

Of the fifty-eight counties in California only eight have more than 1,000 acres of raisin grapes in bearing. The State Board of Equalization reports the acres of raisin grapes bearing in 1915 as follows, for the leading counties:

County	Acres	County	Acres
Fresno	74,890	Colusa	3,000
Tulare	15,000	San Diego	2,870
Kings	13,500	Sutter	2,830
San Bernardino	4,280	Madera	2,195

The 1915 production of the leading varieties is estimated by the California Associated Raisin Company as follows: Muscat raisins, 93,000 tons; Thompson Seedless, 18,000 tons; Sultanas, 8,000 tons; Malagas, and other varieties, 5,000 tons. Total, 124,000 tons.

Fresno County produces about 60 per cent of the California raisin crop, and nearly twice the quantity produced by Spain, which produces from 15,000 to 30,000 tons and has held the lead for centuries. It was in 1892 that the California raisin crop first equaled that of Spain, and it has been increasing the difference ever since.

The value of the crop to the farmers will be over \$10,000,000, and the gross value obtained after the raisins are packed (including the value of the containers and the labor), all of which comes into the State, is at least \$3,000,000 more.

The year 1915 produced the largest quantity of raisins that the State has ever produced in one year. The Muscat variety especially was in excess of an average crop to the extent of over 40%.

Seeded Raisins

Fresno County is the center of the seeded raisin industry, where it originated. The following figures (which are only approximate) show the wonderful increase in this popular form of raisins in California during the last twenty years:

Year	Tons	Year	Tons
1896.....	700	1906.....	24,000
1897.....	3,500	1907.....	26,000
1898.....	7,000	1908.....	24,000
1899.....	12,000	1909.....	28,000
1900.....	14,000	1910.....	31,500
1901.....	14,000	1911.....	33,000
1902.....	16,000	1912.....	35,500
1903.....	18,000	1913.....	35,000
1904.....	18,000	1914.....	40,000
1905.....	21,000	1915.....	45,000

WINES AND BRANDY

During the past ten years the manufacture of California wines has steadily increased as shown by the following table. The yield for 1904 was 15,589,342 gallons of dry wines, and 13,571,856 gallons of sweet wines. In 1914 the output was 22,000,000 gallons of dry wines, and 16,620,212 gallons of sweet wines. The largest production of sweet wines in the history of the industry was 23,280,044 gallons, which occurred in 1911.

The output for 1915 is far from normal. The dry wine production is estimated at 21,571,000 gallons; and up to January 1, 1916, the sweet wine production amounted to 4,035,240.27 gallons.

Wine and Brandy Production, 1897-1915

Year	Dry Wines Gals.	Sweet Wines Gals.	Brandy Gals.
1897.....	28,736,400	5,197,500	1,442,468
1898.....	10,750,000	7,779,000	1,250,000
1899.....	15,103,000	8,330,000	1,699,035
1900.....	16,737,260	6,940,300	3,256,513
1901.....	16,473,731	6,270,300	1,688,482
1902.....	28,224,146	14,835,146	4,564,173
1903.....	21,900,500	12,670,356	1,972,000
1904.....	15,589,342	13,571,856	4,420,839
1905.....	20,000,000	10,700,000	1,750,000
1906.....	26,000,000	15,000,000	1,250,000
1907.....	27,500,500	15,500,000	1,345,000
1908.....	22,500,000	14,750,000	1,500,000
1909.....	27,000,000	18,000,000	2,000,000
1910.....	27,500,000	18,000,000	2,500,000
1911.....	26,000,000	23,280,044	2,000,000
1912.....	22,500,000	17,797,781	1,799,539
1913.....	25,000,000	17,307,600	1,695,406
1914.....	22,000,000	16,620,212	3,320,744
1915 (estimated).....	21,571,000	4,035,240.27	2,613,286.2

These figures must not be taken as an indication of what the actual production of the 1915 vintage will be, for considerable wines have been made at the various wineries which are being held for fortification as soon as the amendment to the drastic internal revenue emergency act has been consummated. It is estimated that fully 10,000,000 gallons of wine are being held in the cellars in the sweet wine districts eligible for fortification. The total production, including such wines, therefore, will probably be in the neighborhood of 14,035,240.27 gallons, as against a production in 1914 of 16,620,212 gallons.

California wines have a rapidly growing market at home and abroad. The pretentious display of wines installed by the California Viticultural Exhibit Association in the Food Products Palace at the Panama-Pacific International Exposition received the Grand Prize for the most comprehensive collection of wines at the Exposition. There were over 300 entries of wines by California producers, and 15 captured Grand Prize honors. The counties representing the largest bearing acreage of *wine grapes* in 1915 (as reported by the various Horticultural Commissioners) are as follows:

San Joaquin, 24,300 acres; Sonoma, 21,000 acres; Fresno, 18,185 acres; Santa Clara, 14,000 acres; Napa, 13,000 acres; San Bernardino, 10,000 acres; Contra Costa, 6,600 acres.

The output of champagne, naturally fermented in the bottle, during 1915 was about the same as 1914; that is, 1,100,000 bottles. Four manufacturers are at present engaged in the making of this champagne in the State: The Italian-Swiss Colony at Asti; Paul Masson at San Jose; F. Korbel & Bros., at Guerneville; and the Cresta Blanca Wine Company at Livermore.

The California commercial brandy produced and deposited in the government warehouses during 1915, amounted to 2,613,286.2 gallons.

This gallonage does not mean the total of all brandy distilled. It is the amount presumed to be deposited for commercial purposes, and does not include the amount required and already used in the fortification of sweet wines in 1915.

Not over 50,000 gallons of grape juice were produced in California in 1915.

Export of Wine by Sea

Year	Cases	Gallons	Number of Countries Receiving
1908.....		4,250,799	12
1909.....		7,440,294	23
1910.....		9,866,539	26
1911.....	11,535	15,125,375	32
1912.....	11,388	13,238,223	33
1913.....	6,933	12,935,239	24
1914.....	11,636	10,461,526	31
1915.....	10,417	8,530,047	25

The shipments of wine out of California by rail during 1915, as estimated by the Pacific Wine and Spirit Review, were 11,030,771 gallons and 55,000 cases. The exports by sea amounted to 8,530,047 gallons and 10,417 cases. A close estimate of the total valuation of wines exported would be \$6,250,000, not including many thousand gallons of brandy shipped out.

Among the countries that import California wines are Alaska, British Columbia, Mexico, Central America, South America, Japan, China, Philippines, Dutch East Indies, Hong Kong, Samoa, Society Islands, Cooks Island, Straits Settlements, Guam, Siberia, Japanese China, Australia, India, Siam, New Zealand, Denmark, Sweden, Hawaii.

If it had not been for the closing of the Panama Canal during the last two months of 1915, there can be no doubt that the shipments of case goods would have far exceeded those of 1914, while at the same time shipments of bulk wines would have shown a considerable increase. The European war also affected the shipment of wines to Scotland, Holland, Belgium, Switzerland and Germany, which during normal times use considerable of the California product.

ALMONDS AND WALNUTS

The production of almonds fluctuates greatly; the crop of 1913 being only a little more than one-half of that of 1912, which was a record year. According to the figures given in the Annual Review of the "California Fruit News" the number of almonds in 1910 was 3,300 tons. In 1915, however, according to the estimate made by the same authority, the crop will amount to 3,800 tons, which is the largest production by 500 tons yet recorded in this State. The import of almonds for 1914-15 were: not shelled, 4,902,713 pounds, and shelled, 12,208,551 pounds, making as a total 17,111,264 pounds. These figures speak volumes for the future of this industry. It has been shown that the United States as a whole produces but 8,000 tons and has importation of about 20,000 tons. Of these 8,000 tons which are raised in the United States, almost one-half the quantity were produced in California last year.

According to the State Board of Equalization, the following counties had the largest number of bearing almond trees in 1915: Yolo, 218,000; San Luis Obispo, 200,000; Stanislaus, 180,800; Contra Costa, 175,000; Solano, 120,000; Sacramento, 110,000; San Joaquin, 106,043. The total number of trees reported from 41 counties was 1,742,879 bearing and 863,383 non-bearing.

The average annual production of almonds in California for the last fifteen years was 2,057 tons. The quantity grown is so small, comparing with the importation, that prices vary according as the latter are light or heavy.

The walnut crop is more regular. The walnut tonnage for the season 1915, according to the report of the California Walnut Growers' Association, amounted to 14,300 tons, the largest tonnage ever produced in the State of California, this being 2,300 tons greater than the crop of 1911, which was the greatest production up to this time.

According to their figures compiled from their shipments and others, the estimate of shipments for the year 1915 were as follows: Los Angeles County, 4,187 tons; Orange County, 5,300 tons; Riverside County, 91 tons; Santa Barbara County, 1,400 tons; Ventura County, 2,750 tons, besides 250 to 300 tons from the Northern Counties.

The acreage reported in 1915 by the State Board of Equalization was 867,045 trees bearing and 362,647 non-bearing.

The counties reported to have the largest number of bearing walnut trees are: Orange, 299,120 trees; Ventura, 132,350; Los Angeles, 93,994; Santa Barbara, 60,700; San Luis Obispo, 50,000. The following counties have over 500 acres bearing walnuts, as reported by Mr. George P. Weldon of the State Horticultural Commission, they are as follows: Orange, 12,000; Los Angeles, 8,901; Ventura, 5,064; Santa Barbara, 4,800; San Bernardino, 649; Santa Clara, 563.

The average production of walnuts in California for the last fifteen years was about 8,469 tons. The importations for 1914-15 amounted to, not shelled, 22,338,348, and shelled, 11,107,490, making a total of 33,445,838 pounds, but the average annual importation for the preceding ten years was about 13,471 tons.

Leading authorities place the aggregate value of California's almond and walnut crops at approximately \$4,700,000. The following table shows the production of both crops for a number of years.

Almond and Walnut Production, 1895-1915

Year	Almonds Tons	Walnuts Tons	Year	Almonds Tons	Walnuts Tons
1895.....	825	2,310	1905.....	2,125	5,750
1896.....	1,605	4,115	1906.....	900	6,125
1897.....	2,375	3,985	1907.....	750	8,250
1898.....	450	5,650	1908.....	3,000	8,000
1899.....	2,320	5,530	1909.....	1,650	7,500
1900.....	2,740	5,430	1910.....	2,750	8,500
1901.....	1,560	6,910	1911.....	1,700	12,000
1902.....	3,270	8,520	1912.....	3,000	11,500
1903.....	3,200	5,500	1913.....	1,750	12,000
1904.....	800	7,590	1914.....	2,500	8,889
			1915.....	3,800	14,300

THE OLIVE INDUSTRY

Olive culture is one of the oldest fruit industries of California. The first orchard was planted in San Diego in 1769, and that county is today a large producer of olives and olive oil. The industry has since spread over more than one-half of the counties in the State and every year adds to the number of trees. There are now thirty-six counties reporting over 1,000 trees, ranging from San Diego in the south to Shasta in the north. The number of California olive trees bearing in the spring of 1915, as reported by the State Board of Equalization, was 818,858 with 392,496 non-bearing. The counties which lead in bearing trees, according to the same report, are as follows: Riverside, 111,879; Los Angeles, 92,718; Tehama, 74,720; Butte, 70,000; San Bernardino, 56,600; Fresno, 48,930; Sonoma, 45,000. It is interesting to note, however, that Butte County has the largest number of non-bearing olive trees of any county in the State.

Statistics are difficult to obtain but this industry is becoming more attractive and remunerative, and the removal of competition with adulterated oil by the Pure Food regulations has given an impetus to planting new trees. Estimate of the production of 1915 is given by the California Olive Association at 1,000,000 gallons of olive oil, and 300,000 cases of packed olives of six gallons to the case.

For 1914-15, the figures given by the "California Fruit News" show an importation of 6,710,967 gallons of oil and 3,622,275 gallons of olives.

The acreage growing in California in 1915, as given by Mr. George P. Weldon, from the report of the County Horticultural Commissioners, was 16,054 acres bearing and 11,580 non-bearing.

Among the largest olive groves reported in the State is that of Slymar (near Los Angeles) with 1,200 acres under one management, and a 2,000-acre tract near Porterville.

The California ripe olive is rapidly coming into favor. During 1914-15 it has appeared on the market in a new form, known as the dehydrated olive, which is becoming very popular. A new process of handling pickled olives has been worked out by the University of California. This process enables ripe pickled olives to be shipped without liquid of any kind, thus saving the freight charges and making them easier to handle.

THE DAIRY INDUSTRY

Dairying offers one of the greatest money-making opportunities in California, for the simple reason that the local consumption is much greater than the output. Butter, cheese and evaporated milk are being brought into the State in large quantities from other States and even from New Zealand and Australia. By far the greater part of the cheese consumed in the State is still being imported.

The State Dairy Bureau is strictly accurate in its statement that the opportunities for dairying in California are "certainly greater than any other part of the United States." For instance, alfalfa grows all the year and can be cut as many as six or seven times, with a yield as high as nine or ten tons to the acre. That the recognition of this fact is rapidly coming is shown by the other fact that a great deal of land which formerly went begging at \$25 per acre is now selling for \$200 per acre.

The following statistics, taken from the reports of the State Dairy Bureau and from other authoritative sources, show that this industry is rapidly coming to the front.

Annual Value of Dairy Products of State

1913	
Butter 55,542,709 pounds.....	\$17,840,318
Cheese, 5,600,972 pounds.....	899,516
Condensed, evaporated and powdered milk, 8,637,928 pounds.....	777,468
Casein, 665,000 pounds.....	33,250
Market milk, cream and ice cream.....	11,000,000
Calves produced on dairies.....	2,000,000
Skim milk and buttermilk.....	1,500,000
Total.....	\$34,050,552

1914	
Butter, 59,286,460 pounds.....	\$16,368,992
Cheese, 6,016,815 pounds.....	950,055
Condensed, evaporated and powdered milk, 14,153,401 pounds.....	1,076,300
Casein, 992,917 pounds.....	46,146
Market milk, cream and ice cream.....	11,500,000
Calves produced on dairies.....	2,500,000
Skim milk and buttermilk.....	1,500,000
Total.....	\$33,941,493

1915	
Butter, 67,522,409 pounds.....	\$19,378,932
Cheese, 6,249,775 pounds.....	881,218
Condensed, evaporated and powdered milk, 16,579,317 pounds.....	1,352,959
Casein, 690,750 pounds.....	34,537
Market milk, cream and ice cream.....	12,000,000
Calves produced on dairies.....	3,000,000
Skim milk and buttermilk.....	1,750,000
Total.....	\$38,397,646

Production of Butter (Pounds)

Year	Creamery method	Old method	Totals
1896.....	10,097,323	21,508,117	31,605,440
1897.....	10,866,646	17,811,793	28,678,439
1898.....	10,410,479	13,280,549	23,691,028
1899.....	12,725,814	12,143,270	24,869,084
1900.....	16,486,695	12,296,164	28,782,859
1901.....	19,017,512	10,713,370	29,730,882
1902.....	21,593,021	9,935,741	31,528,763

Since 1902 the total production has increased as follows:

Year	Pounds	Year	Pounds
1903.....	34,676,311	1909.....	49,595,869
1904.....	35,636,909	1910.....	45,819,741
1905.....	41,961,047	*1911.....	50,380,736
1906.....	44,044,578	*1912.....	54,940,886
1907.....	44,599,211	*1913.....	55,542,709
1908.....	48,469,585	*1914.....	59,286,460
		*1915.....	67,522,409

*Reported by State Dairy Bureau.

Irrigation and Butter Production

As showing the effect of irrigation on the dairy interests, the following exhibit, giving the production of butter in pounds in the principal counties in which irrigation is practiced, is instructive:

Counties	1909	1910	1911	1912	1913	1914	1915
Fresno.....	3,721,262	3,290,825	3,803,644	4,144,404	3,878,289	3,292,572	3,158,220
Kern.....	545,900	565,900	693,413	732,059	566,965	986,457	982,694
Kings.....	3,432,879	3,218,036	3,552,542	3,069,881	2,313,963	3,164,620	3,811,477
Merced.....	1,396,865	2,510,269	3,103,222	1,351,049	3,910,815	3,876,875	4,253,000
Sacramento.....	1,592,138	1,102,012	1,405,054	1,900,417	1,936,560	1,649,153	1,737,511
San Joaquin.....	2,350,000	1,425,543	941,430	1,336,344	1,215,644	1,292,474	1,184,658
Stanislaus.....	4,155,701	4,363,296	5,166,515	6,894,225	7,541,900	8,184,390	9,973,320
Tulare.....	2,307,238	3,072,198	3,955,583	3,947,284	3,971,217	4,362,290	4,787,690
Yolo.....	807,787	1,103,114	1,096,718	1,104,509	1,034,902	1,061,703	1,091,496
Imperial.....	1,677,640	1,948,941	2,885,941	4,110,736	5,398,228	5,710,287	8,260,000
Humboldt*.....	4,715,998	4,790,280	5,238,382	5,095,014	5,168,990	5,251,887	5,591,870

*Non-irrigated.

Imperial County is entirely dependent on irrigation, and its butter production, since its formation in 1908, has grown nearly five-fold, as the above shows.

Cheese

While the State has more than doubled its butter production since 1900, the cheese production has increased over a million pounds. The cheese produced is, with a few exceptions, only that made by the ordinary Cheddar process. There is a considerable amount of fancy and hand-made cheese which has not been reported. Out of the fifty-eight counties in the State, 34 produced cheese during the year 1915. Here are the totals for the past fifteen years:

Cheese Production, 1900-1915

Year	Pounds	Year	Pounds
1900.....	4,989,960	1908.....	6,162,514
1901.....	5,681,366	1909.....	5,931,194
1902.....	6,503,441	1910.....	4,648,348
1903.....	7,218,639	1911.....	4,580,495
1904.....	6,133,898	1912.....	4,785,617
1905.....	6,020,672	1913.....	5,600,972
1906.....	6,418,430	1914.....	6,016,815
1907.....	5,928,942	1915.....	6,249,775

There has been a notable increase in cheese production in several counties during the past year. Santa Clara is still first in rank with 1,089,288 lbs., against 768,101 lbs. for 1914. Monterey ranks second, with 800,789 lbs. against 728,111 lbs. for 1914. Marin is still third although the production was less than in 1914. The 1915 production was 476,180 and in 1914 it was 558,630 lbs. Fresno ranks fourth with 445,945 lbs. in 1915 against 169,546 in 1914. The counties which produced over 200,000 lbs. are as follows:

Counties Which Produced Over 200,000 Pounds of Cheese in 1915

County	Pounds	County	Pounds
Santa Clara.....	1,089,288	Humboldt.....	344,350
Monterey.....	800,789	Sonoma.....	271,753
Marin.....	476,180	Santa Cruz.....	228,169
Fresno.....	445,945	San Benito.....	202,484
Sacramento.....	427,065		

Dairy Imports

Large quantities of butter and cheese continue to come from the East and from Australasia, notwithstanding the superior advantages presented in this State for enlarging this branch of farming and for creamery development. It is interesting to note that the San Francisco market alone received in 1915-10,600,600 lbs. of cheese and 27,323,500 lbs. of butter.

Butter in San Francisco

	1912-1913		1913-1914		1914-1915	
	Pounds	Price cents	Pounds	Price cents	Pounds	Price cents
October.....	2,035,900	34.00	1,538,100	32.48	1,463,600	32.50
November.....	1,819,900	33.04	1,433,300	32.56	1,315,400	34.00
December.....	1,696,500	33.66	1,703,100	31.85	1,735,100	31.50
January.....	1,767,500	34.28	1,931,600	29.92	1,539,600	32.00
February.....	1,378,100	35.10	1,689,900	28.19	1,553,800	30.50
March.....	2,008,100	35.43	2,107,200	22.85	2,575,500	27.50
April.....	2,694,700	29.10	2,811,200	23.06	2,996,300	23.50
May.....	2,614,000	26.98	2,435,300	23.83	3,154,866	24.00
June.....	2,106,200	27.72	1,964,400	24.02	2,775,334	26.00
July.....	1,711,100	28.95	1,871,600	24.55	3,588,000	27.00
August.....	2,593,600	32.43	1,765,500	27.26	2,591,400	28.00
September.....	1,479,500	34.78	1,329,750	30.81	2,023,800	28.00
Total.....	23,905,100	32.12	22,580,950	27.61	27,323,500	28.70

Cheese in San Francisco

	1912-1913		1913-1914		1914-1915	
	Pounds	Price cents	Pounds	Price cents	Pounds	Price cents
October.....	956,000	16.92	616,400	17.03	841,500	17.00
November.....	700,500	17.93	776,300	18.37	548,800	16.50
December.....	757,800	15.89	736,100	17.69	538,300	13.50
January.....	599,700	15.44	559,400	18.06	508,400	15.00
February.....	482,800	16.63	704,600	18.89	488,000	14.00
March.....	792,000	15.47	739,700	16.45	603,400	14.50
April.....	657,600	15.88	1,044,700	14.76	775,800	13.00
May.....	915,500	14.22	865,100	13.52	796,600	12.00
June.....	958,100	14.79	1,282,700	12.99	1,403,300	11.50
July.....	919,300	15.54	1,027,300	13.23	1,455,200	13.00
August.....	1,214,000	17.16	1,079,000	14.08	1,248,900	13.00
September.....	570,400	16.82	660,200	14.37	1,392,400	16.00
Total.....	9,523,700	16.06	10,091,500	15.79	10,600,600	14.10

The Three Leading Dairy Counties

According to the last report of the State Dairy Bureau, whose figures are for the year ending September 30, 1915, the following are the three counties which lead in butter production: Stanislaus and Imperial Counties under irrigation, and Humboldt County under non-irrigation.

County	No. of Creameries	Pounds
Stanislaus.....	7	9,973,320
Imperial.....	7	6,334,310
Humboldt.....	9	5,501,870

Butter is of course only one of the dairy products, but its valuation approximates at least two-thirds of the total. Detailed figures of the three leading counties for the calendar year 1915 are not complete, but the available figures are as follows, as reported by the leading commercial organization in each county:

Stanislaus County

Article	Weight Pounds	Value
Butter fat and sweet cream.....	9,973,320	\$2,990,000
Condensed milk.....	536,000	80,000
Cheese.....	95,000	15,780
Buttermilk.....	9,500,000	9,500
Total.....	20,104,320	\$3,095,280

Imperial County

Article	Weight Pounds	Value
Butter.....	8,260,000	\$2,312,800
Cheese.....	71,000	12,070
Total.....	8,331,000	\$2,324,870

Imperial Valley realizes no revenue from condensed or dry milk, but its skimmed milk is fed to hogs at an average price of 35c per cwt. There is no cream sold outside of the Valley at present.

Humboldt County*

Article	Weight Pounds	Value
Butter.....	6,066,350	\$1,531,570
Cheese.....	656,550	105,050
Condensed skim milk.....	3,114,400	212,180
Dry milk.....	1,113,410	126,850
Casein.....	1,116,530	61,410
Total.....	12,067,240	\$2,037,060

*Some shipments of butter, cream and possibly milk, were made by rail, but no full report of these has yet been received.

One shipment of 100,049 lbs. of canned butter (for the Navy) was reported by the California Central Creameries, the value being given at \$30,015. This is not included in the above table of shipments by sea.

The amount of butter used locally is estimated at 1,500 000 lbs. No estimates are made of local consumption of other dairy products.

The commercial production of casein, now produced extensively in the northern counties, is a comparatively new branch of the dairy industry. Casein is used as a sizing in making high grades of paper and also for piano keys, billiard balls, and other articles formerly made exclusively of ivory.

Del Norte County in 1915 produced 163,768 pounds of casein.

BERRY GROWING IN CALIFORNIA

Information on the berry growing industry is somewhat hard to get as statistics have not been carefully kept on this subject. However, this is an important industry and from reports submitted by various authorities the following figures are given.

Los Angeles County Horticultural Commissioner reports as follows:

No. of Acres	Variety of Berry	Production
2,489	Strawberries.....	1,751,830 crates
1,346	Blackberries.....	110,065 "
210	Raspberries.....	83,565 "
185	Loganberries.....	66,401 "
4,230		2,011,881 crates

Santa Clara County's report, furnished by Mr. Joseph T. Brooks, Secretary of the San Jose Chamber of Commerce, is as follows:

"There are 700 acres or more of strawberries, blackberries and loganberries in this valley, with a production of about 8,400 tons and a total valuation of about half a million dollars. The bulk of the berry crop is shipped to the produce markets of San Francisco and Oakland, although San Jose and the valley towns absorb a very considerable portion."

Sebastopol berry growers report between 1,700 and 1,800 acres. A large portion of this acreage is planted between rows of apples. The yield was approximately 3,400 tons, divided as follows:

Variety of Berry	No. of Tons
Lawton Blackberries.....	1,500
Mammothberries.....	1,000
Loganberries.....	875
Raspberries.....	25
	3,400

Of this amount about 2,500 tons were canned and about 1,000 tons were shipped to Middle Western markets.

Orange County, through their Assessor, James Sleeper, reports 200 acres of strawberries, the crop from which was valued at \$40,000.00.

Sacramento County Horticultural Commissioner reports 2,000 acres in berries, about 1,500 acres being planted to strawberries and 500 to blackberries, raspberries, etc.

THE POULTRY INDUSTRY

The farm value of poultry and eggs produced in California is about \$18,000,000, according to Mr. George H. Croley, president of the Federated Poultry Association. The leading poultry districts of the State, arranged in order of their importance and value of product, are as follows:

1. Petaluma District, including Santa Rosa and Sebastopol.
2. California south of Tehachapi—eight counties.
3. Hayward-Livermore, including the suburbs of the City of Oakland.
4. Santa Cruz-Watsonville-Salinas.
5. San Jose-Gilroy-Hollister (Santa Clara Valley).
6. Sacramento-Stockton.
7. San Joaquin Valley, excepting that portion included in District No. 6.
8. Sacramento Valley, excepting that portion included in District No. 6.
9. Sonoma-El Verano-Napa.
10. Santa Maria-Arroyo Grande.
11. Martinez-Concord-Walnut Creek (San Ramon Valley).
12. Northwestern Coast District.
13. Northeastern Mountain District.
14. Eastern Mountain District.

The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally.

An average chicken ranch near Petaluma consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, quite a number of larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1 per year.

Notwithstanding the remarkable development of the poultry business in various parts of the State, the increase is not sufficient to meet the demands of the immediate market. The rapidly expanding population of the State requires the importation in season of about 425 carloads of live and 75 carloads of dressed poultry to San Francisco and Los Angeles, besides several million dozen eggs each year from Eastern points, and there is no immediate prospect of the home supply overtaking the market. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County and has the advantage of a very low freight rate to San Francisco. The market business done from that point, and its growth, are reflected in the following figures:

For the last three years this district has shipped about 10,000,000 dozen of eggs annually and over 80,000 dozen of poultry, but 1915 was the banner year for egg production.

According to figures furnished by Mr. Frank H. Snow, editor of the Petaluma Weekly Poultry Journal, the production for this year was 11,681,134 dozen as against 1,464,744 dozen for 1913, which was the highest record at that time. These figures only represent the actual shipments and do not take into account the hundreds of thousands of dozens of eggs which are used for hatching purposes. The shipment of poultry, however, shows a decided decrease, being but 79,605 dozen for the year as against 84,031 in 1914 and 88,824 dozen in 1913.

Rapid strides are being made in this industry in Los Angeles County, which ranks second in amount of production. The Horticultural Commissioner reports that dressed poultry to the value of \$765,000 was sold in 1915 while eggs added over \$2,000,000 to the wealth of the county last year. This valuation is based on the census for the State and allows 63¾c each for poultry and 25c per dozen for eggs.

FARM ANIMALS

The following figures, from the Year-Book of the United States Department of Agriculture, give the total number and farm value of farm animals in California on December 31st of each year:

Kinds	1913			1914			1915		
	No.	Avg. price	Value	No.	Avg. price	Value	No.	Avg. price	Value
Horses.....	498,000	\$100.00	\$49,800,000	503,000	\$100.00	\$50,300,000	493,000	\$96.00	\$47,328,000
Mules.....	73,000	120.00	8,760,000	74,000	120.00	8,880,000	70,000	110.00	7,700,000
Milch cows.....	515,000	62.00	31,930,000	541,000	72.00	38,952,000	568,000	69.00	39,192,000
Other cattle.....	1,410,000	33.00	46,530,000	1,480,000	39.30	58,164,000	1,554,000	36.30	56,410,000
Sheep.....	2,551,000	3.80	9,694,000	2,500,000	4.50	11,250,000	2,500,000	5.00	12,500,000
Hogs.....	797,000	10.50	8,368,000	877,000	10.50	9,208,000	947,000	8.40	7,955,000
Total.....	5,844,000	.....	\$155,062,000	5,975,000	.....	\$176,754,000	6,132,000	.....	\$170,835,000

It may be roughly estimated that about 60,000 head of cattle, 160,000 head of sheep, and 75,000 hogs are slaughtered for market in the State each month, part of which comes from adjoining States.

Enlarged outside markets and increasing home demand promise well for the future of the stock-growing industry, especially of hogs. The Government gives the average at which hogs are marketed in the Pacific States at twelve months.

The census report gives, as of April 15, 1910, the following from 80,304 farms reporting:

Kind	Farms reporting	Number	Value
Cattle.....	63,053	2,077,025	\$52,785,068
Horses and colts.....	76,119	468,886	47,099,196
Mules and mule colts.....	11,015	69,761	9,016,444
Asses and burros.....	1,099	2,592	347,315
Hogs.....	31,609	766,551	5,106,803
Sheep and lambs.....	3,857	2,417,477	8,348,997
Goats and kids.....	1,714	138,413	320,829

Dairy cows are included in cattle; 61,101 farms reported 467,332 cows and heifers, valued at \$18,597,328. The number and price is increasing.

Hogs in California

Mr. J. I. Thompson, of the California Swine Breeders Association, reports that the year 1915 showed an increase of about 8% in the total production of hogs in California. Because of the greater consumption, however, the number raised is probably not more than one-third the number consumed, about the same ratio of last year. Some improvement in the quality of hogs is due to the greatly increasing practice of feeding some grain at all times in addition to alfalfa pasture.

According to the United States Monthly Crop Report, the estimated number of swine for California was 947,000, making a total value of \$7,955,000.

Wool Production of California

According to the United States Crop Reporter for January, 1916, the number of sheep in California in 1915 was 2,500,000, valued at \$12,250,000, while the wool production amounted to 11,590,000 pounds, which brought an average price of 23.4 cents per pound for unwashed wool as compared with 18.4 cents for 1914 and 15.7 cents for 1913.

Year	Pounds	Year	Pounds
1873	32,155,169	1894	36,968,400
1874	39,356,781	1895	35,856,690
1875	43,532,223	1896	27,195,550
1876	56,550,973	1897	34,882,325
1877	53,110,742	1898	28,063,240
1878	40,862,091	1899	28,332,090
1879	46,903,360	1900	27,750,000
1880	46,074,154	1901	26,900,000
1881	45,076,639	1902	21,000,000
1882	40,529,119	1903	22,000,000
1883	40,848,690	1904	22,000,000
1884	37,415,330	1905	22,000,000
1885	36,561,390	1906	24,000,000
1886	38,509,160	1907	15,000,000
1887	31,564,231	1908	15,000,000
1888	32,569,972	1909	16,000,000
1889	34,008,370	1910	15,500,000
1890	34,854,640	1911	14,000,000
1891	33,183,475	1912	13,500,000
1892	35,802,930	1913	12,000,000
1893	33,169,375	1914	11,480,000
		1915	11,590,000

NOTE—"Pulled" wool not included in table.

GRAIN CROPS

The average devoted to grain in California (with the exception of barley) has been rapidly falling off year by year, for the reason that the large ranches formerly devoted exclusively to grain have been rapidly subdivided and planted to more profitable crops. Barley still leads all cereals, with 39,440,000 bushels. Wheat follows with 7,040,000 bushels. Oats come third, with 6,963,000 bushels. Corn fourth, with 2,624,000 bushels. Rye last, with 112,000 bushels.

Fluctuation in Grain Production

The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1898 and of rye since 1907:

Year	Wheat bushels 60 lbs.	Barley bushels 48 lbs.	Corn bushels 56 lbs.	Oats bushels 32 lbs.	Rye bushels 60 lbs.
1898	12,403,700	12,263,461	1,184,040	1,943,304	
1899	29,666,666	14,046,087	1,536,975	1,845,787	
1900	20,933,333	19,769,760	1,351,975	1,477,771	
1901	28,751,500	26,162,780	1,850,793	4,887,374	
1902	18,759,490	23,489,065	1,839,150	5,148,583	
1903	14,880,990	21,075,000	1,777,162	5,756,964	
1904	10,895,216	24,418,604	1,350,000	5,250,000	
1905	5,660,360	22,094,186	1,204,000	4,735,000	
1906	8,333,330	26,162,790	1,100,000	4,300,000	
1907	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908	11,680,000	25,427,000	1,600,000	6,700,000	792,000
1909	11,550,000	31,270,000	1,740,000	6,280,000	842,000
1910	17,100,000	43,400,000	1,838,000	8,325,000	986,000
1911	8,640,000	40,600,000	1,836,000	7,140,000	136,000
1912	6,270,000	41,760,000	1,924,000	7,800,000	141,000
1913	4,200,000	33,150,000	1,815,000	6,636,000	120,000
1914	6,800,000	42,060,000	2,160,000	7,700,000	116,000
1915	7,040,000	39,440,000	2,624,000	6,963,000	112,000

California Grain Crops in 1915

The following figures are taken from the Year-Book of the United States Department of Agriculture:

	Acreage	Bushels	Farm Value
Barley.....	1,360,000	39,440,000	\$24,453,000
Wheat.....	440,000	7,040,000	6,688,000
Oats.....	211,000	6,963,000	3,482,000
Corn.....	64,000	2,624,000	2,309,000
Rye.....	8,000	112,000	101,000

It appears from Department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley, which now equals in acreage and exceeds in yield and value all other grain crops combined.

The malting qualities of California barley give it a ready market abroad.

Oats are raised, in some parts of the State, more for hay than for threshing, while corn is but little used as feed for work animals. Barley has long been the main grain food in California, but of late years oats have come into use to quite an extent. The non-saccharine sorghums are also important in this respect.

The San Francisco Chamber of Commerce reports that 13,712,927 bushels of barley were exported from San Francisco in 1915.

According to the State Board of Equalization a total of 1,896,421 acres were sown to barley in 1915. The leading barley counties are as follows: Solano, 230,000 acres; Colusa, 185,000 acres; San Joaquin, 160,000 acres; Monterey, 110,000 acres; Stanislaus, 100,000 acres; Yolo, 96,020 acres; Merced, 88,000 acres; Yuba, 88,450 acres.

The total area sown to wheat was 905,760 acres, the leading counties being as follows: Solano, 165,000 acres; San Luis Obispo, 75,000 acres; Tehama, 61,390 acres; Kern, 55,000 acres.

Acreage devoted to oats was 337,562. The three leading counties were: Stanislaus, 50,000 acres; San Mateo, 37,500 acres; Sacramento, 30,000 acres.

There were 104,364 acres in corn. The largest plantings were: Imperial, 54,502 acres; Merced, 9,500 acres; Inyo, 7,600 acres.

Of the 22,765 acres sown to rye in thirteen counties, Merced led with 9,200 acres, San Joaquin followed closely with 9,100 and Lassen came third with 2,000.

HAY AND FORAGE CROP

The hay crop of California is one of its most valuable agricultural products. The census returns for the crop of 1909, a fair year, gave the yield at 4,327,130 tons, valued at \$42,187,215. These returns were as follows:

Crop	Farms reporting	Acres harvested	Quantity Tons	Value
Timothy alone.....	370	13,725	20,001	\$185,579
Timothy and Clover mixed.....	958	46,661	73,183	629,575
Clover alone.....	703	8,519	20,380	213,289
Alfalfa.....	19,904	484,134	1,639,707	13,088,530
Millet or Hungarian grass.....	101	2,142	2,688	27,483
Other tame or cultivated grasses.....	2,274	90,414	119,415	1,253,428
Wild, salt or prairie grasses.....	3,679	253,127	281,033	2,028,494
Grains cut green.....	39,397	1,604,745	2,019,526	24,056,727
Coarse forage.....	2,175	25,868	60,611	438,065
Root forage.....	1,021	4,012	90,586	266,015
Total hay and forage, 1909.....	53,760	2,533,347	4,327,130	\$42,187,215
Hay (crop Reporter), 1912.....	.....	2,500,000	3,825,000	52,402,000
Hay (U. S. Farmers' Bulletin), 1913....	.....	2,400,000	3,600,000	48,600,000
Hay (U. S. Year Book of Agric.), 1914....	.....	2,700,000	5,265,000	43,173,000

California grain cut in the milk is highly prized for hay and is sent East by the trainload for feeding race-horses.

Dairying and hog-raising in connection with alfalfa-growing is becoming one of the leading industries of the State, being one that is within reach of the man with comparatively small capital.

The State Board of Equalization reported 805,855 acres of standing alfalfa in 1915. The present production of alfalfa in California is about 1,500,000 tons. Lower prices have led to its increased use on the farm and to the introduction of mills for making alfalfa meal. The acreage is steadily increasing and five cuttings may be made yearly on irrigated ground, with an average of six tons per acre.

THE HOP INDUSTRY

The hop acreage in California, as in other parts of the United States, varies greatly from year to year; if a partial failure of the crop elsewhere sends the price skyward, the following year brings large plantings. Under normal conditions the acreage is fairly constant.

The last report of the State Board of Equalization gives the total acreage of hops in 1915 as 14,353, twelve counties being listed. The counties reporting the largest plantings were as follows: Sacramento, 3,500; Sonoma, 3,200; Mendocino, 2,463; Yolo, 1,575; Yuba, 1,050. Alameda, Butte, Lake, Shasta, Tehama Counties reported more than one hundred but less than one thousand acres.

The principal fields are in the Sacramento Valley, where a failure has never been known and where the quality of the hops closely matches that of the New York and European varieties. The following tables show the extent of the industry:

Hop Production in California

Year	Bales	Pounds	Year	Bales	Pounds
1900.....	38,000	7,220,000	1908.....	63,200	11,692,000
1901.....	48,000	9,120,000	1909.....	69,688	12,892,280
1902.....	53,500	10,165,000	1910.....	71,511	13,229,535
1903.....	57,000	10,545,000	1911.....	93,981	17,367,985
1904.....	63,000	11,655,000	1912.....	117,770	21,198,600
1905.....	.....	13,135,000	1913.....	120,000	22,200,000
1906.....	108,000	20,000,000	1914.....	100,000	18,500,000
1907.....	90,000	16,650,000	1915.....	115,000	21,275,000

E. Clemens Horst gives the following interesting history of the hop industry in California:

"California gladly acknowledges her debt to Europe and to New York State for her start in the hop-growing industry. The start was a literal one as it began with root cuttings. She is contributing the improvements that are being made in the industry.

"Forty years ago a California pioneer in hop-growing as a culmination of experiments, perfected the high wire trellis system which is now universally used instead of the old method of growing hops on poles. This was a big step in advance and with the air drying system the proper curing of hops is a scientific certainty. The hops are dried at the proper degree of even heat to preserve the maximum brewing qualities.

"The newest and greatest improvement that California offers to the hop-growing world is the hop picking machine. For the last half century experiments have been made with a view to inventing a machine that could be used to harvest but none were successful, although many were patented, until a California hop-grower invented a machine that actually does the work better than it can be done by hand. This machine, like all great inventions, was born of necessity.

"In 1905, 1906 and 1907 all crops suffered because of labor troubles. It was almost impossible to harvest the hop crop and something had to be done to eliminate labor. The machine was invented after long, arduous, expensive experimentation, and this year proved its great worth by harvesting hops cleaner, quicker and better than it could have been done by hand labor. One machine with a crew of forty men and working ten hours a day, takes the place of a field crew of from 225 to 250 hand-pickers. It insures its owner that he will be able to pick his crop when it is ready to be picked, as the machine can be run day or night."

The Brewery Industry

Closely connected with the hop industry is the brewing of beer. This is a much larger industry than most people realize, representing an investment aggregating \$50,000,000. It supports about 20,000 people, 4,000 of whom are directly employed inside the breweries at high wages. The total paid in wages to these 4,000 amounts to about \$6,000,000 a year and their employment is permanent regardless of fluctuations in the market demand for the product.

There are about seventy breweries in the State, many of them small, and the annual production of beer is about 1,350,000 barrels. There are also three large malt houses in the State.

The California breweries use yearly 80,000,000 pounds of the choicest barley, with a value of \$1,600,000; they also use 1,250,000 pounds of hops annually. In addition they spend \$1,500,000 for cooperage, bottles, etc. The revenue paid to the United States Government on beer alone amounts to about \$2,025,000 annually, while about an equal amount goes to the municipal and county governments of the State. Two large Washington breweries have moved to California on account of prohibition legislation.

RICE IN CALIFORNIA

From experiments made in the Sacramento Valley during recent years, by rice experts of the Department of Agriculture, the adaptability of soil and climate to the successful culture of rice has been conclusively demonstrated, in the vicinity of Biggs especially. From one planting a yield of 3,000 pounds per acre was harvested. This rice was awarded the gold medal at the Seattle Exposition in 1909. Plantings made in 1910 justified the expectations of those interested, both as to yield and quality.

Commercial plantings really began in 1912, with 1,000 acres, yielding approximately 3,000,000 pounds. In 1913, 6,000 acres were planted with a yield of 19,200,000 pounds.

According to the report of Mr. George E. Harvey, Secretary of the Pacific Rice Growers' Association, the rice grown in the State of California for the season of 1915 comprised about 30,000 acres and made an approximate yield of over 800,000 bags—about twenty-seven sacks to the acre. Of this, over 50% was grown in Butte County and over 90% in the Sacramento Valley.

There are seven mills in the State having a capacity of approximately 5,000 sacks of rough rice per day of eleven hours.

The outlook for the 1916 season is that there will be between 80,000 and 100,000 acres planted to rice in the State, and that the total yield will approximate 2,500,000 bags.

It is estimated that about 200,000 acres in California are suited to the production of rice. The ordinary yield per acre in the Sacramento Valley is about 2,000 pounds, although some growers report as much as 8,000 pounds per acre. The leading counties are Butte, Colusa, Yuba, Glenn and Yolo.

In Butte County it is estimated that the cost of growing the crop is \$21.55 per acre; cost of harvesting, threshing, etc., on a basis of 3,500 pounds per acre, is \$15.75; total cost of production, \$37.10 per acre. Taking an estimated value of \$70 as an average net price the net profit is approximately \$32.90 per acre.

The United States Department of Agriculture gave California fourth rank in the production of rice in the United States in 1915. The average yield per acre was 66.7 bushels, while the nearest competitor produced an average of only 48.4.

The following gives a list of the rice mills and their capacity in the various sections of the State:

Rice Mills	Capacity
	bags of paddy rice a day
Phillips Rice Milling Co., Sacramento	3,000
Butte County Rice Mill, Gridley	1,200
Butte County Rice Mill, Biggs	1,600
Pacific Coast Rice Milling Co., San Francisco	1,800
The Natoma Rice Milling Co., San Francisco	1,000
C. E. Grosjean Rice Milling Co., San Francisco	2,000
Biggs Rice & Land Company, Biggs	600

COTTON IN SOUTHERN CALIFORNIA

Information supplied by W. E. Packard.

The adaptability of the soil and climate of California to the growing of cotton has been known for some years. Of late, planting has begun on a large scale and the acreage is increasing year by year.

In 1909 over 450 acres were planted in Imperial County, with seeds from Georgia and Texas. The result was most gratifying, average of 450 pounds of lint to the acre being produced, some 350 bales in all, most of which found a ready market at the California Cotton Mills in Oakland. In 1910 some 6,000 acres were cultivated, producing 4,000 bales of excellent staple.

During the season 1913, 26,000 acres were planted, with a production of 21,500 bales. The Bureau of Census reports that 49,835 bales were ginned in California in 1914, including cotton grown in the Mexican side of Imperial Valley.

It is an interesting fact that California broke several cotton records during 1914. The earliest bale of cotton ever ginned in the United States was grown near Calexico and ginned on June 17th, three days earlier than the previous record held by Brownsville, Texas. The cotton was grown as the third crop on the same stalks. Seed taken from the record bale and planted on the same acre produced a second bale on October 15th of the same year.

The United States Department of Agriculture reported in February that both long and short staple cotton in California yielded 500 pounds to the acre. Missouri had the next best record, with 325 pounds of long staple and 295 of short staple per acre. There is very little rain to stain the fibre nor is there any frost until the season is practically over. Therefore, clean picked California cotton brings a premium over the prevailing market price, on account of the beautiful whiteness of the product.

According to W. E. Packard, Agronomist in charge of the Imperial Valley Experiment Farm, commercial cotton growing is at present confined to Imperial County and a small acreage in the Palo Verde Valley of Riverside County. Calexico is the chief cotton center.

However, it has been successfully grown in other counties and is adapted to many sections of the State where it is now unknown, provided a suitable supply of cheap and experienced labor can be developed.

Two kinds are now being raised. The short staple now yields from three-fourths of a bale to two bales per acre, with a ginning percentage of about 33% and a selling price ranging from 8 to 13 cents per pound. The Durango upland long staple (1 3/16" to 1 1/4") yields the same, has a ginning percentage of from 29% to 31%, and commands a price from 2 to 5 cents higher than the short staple. The Egyptian (long staple) has been successfully grown but labor and handling conditions have discouraged its further extension.

The extent of the industry in the Imperial Valley has called for the installation of twenty modern four-stand gins, four cottonseed oil mills and two compressors, as well as a strong Association of Growers for the selling of their cotton. The yield for 1915 is about 27,000 bales, including cotton grown on the Mexican side of the international boundary.

FLAX, HEMP AND RAMIE

The culture of these valuable textile plants has lately received an impetus in several localities which promise important developments. The soil in some places along the Sacramento and San Joaquin Rivers is suitable for producing a fine quality of hemp. The California Cotton Mills of Oakland buy nearly all the hemp grown in this State, which is manufactured into twine of various kinds, for all of which there is a market in the State.

It is even claimed that a better quality of hemp is being grown in California than anywhere else in the world. When properly handled after harvesting, it produces from 1,500 to 1,800 pounds per acre of long, clean, silky fibre, selling at from 15 to 18 cents per pound. It is one of the easiest of all crops to grow, requiring nothing except preparation of the soil and seeding; no cultivation is necessary. The harvesting is a

simple matter and the machinery required for turning out a ton of fibre a day is not expensive and can be operated by two men. It is probably only a question of a short time until this important fibre industry will receive much more attention.

Considerable experimental work has been done in different parts of the State in the culture of ramie fibre. It has been successfully grown in both the San Joaquin and the Sacramento Valleys, but perhaps the largest plantation is to be found in Kern County in what is known as the Lerdo Colony. Here have been planted about 7,000 acres, the product of which finds a ready market in Germany. The stalks grow to a great size and the fibre is long and fine and of a firm texture, varying in length from two to seven inches. The great difficulty has been in perfecting machines for decortication, but during the past few years Mr. G. W. Schlichten, perhaps one of the greatest authorities on ramie fibre in the United States, has installed machines in his colony with which he is doing this work very successfully. The United States at the present time is importing \$89,000,000 worth of fibres and as there are many parts of the State where they can be successfully grown it is reasonable to say that there is a future for this industry.

SILK

The raising of silk worms, which attracts some attention, is increasing slowly in California, and is not yet on a commercial basis. The climate of California is admitted to be adapted to the raising of silk worms. The season for production extends over a period of six to eight months, while in Europe it lasts only as many weeks.

This industry has received considerable impetus through the efforts of the Ladies Silk Culture Society which maintained an exhibit at the P. P. I. E. A reeling machine was imported from Italy and put into operation in this exhibit. This device promises to be a solution of the labor problem which has confronted those interested in silk culture, as this machine with one operative will do the work of eight people. Cheney Brothers, silk manufacturers of South Manchester, Conn., made a very favorable report on the California product, stating that it was suitable for the finest kinds of manufacture.

THE BEET SUGAR INDUSTRY

It is almost forgotten now that the beet sugar industry of the United States originated in California, at Alvarado in Alameda County, which is still one of the seven leading beet sugar counties of the State.

The campaign of 1912-13 in California with 1612 acres produced 980,894 tons of beets, with a sugar output of 155,432 tons of sugar, giving the State second place, next to Colorado. For the campaign of 1913-14 California produced, on 80,740 acres, 863,256 tons of beets, which yielded 132,621 short tons of sugar, according to the editor of "Sugar." The report of "Sugar" for the campaign of 1914-15 gives California an output of 124,200 acres, and 1,218,000 short tons of beets, which yielded 203,200 short tons of sugar. The average value of beets per ton for 1914-15 was \$5.67 and the estimated value of the sugar crop, according to J. K. Armsby Company, was \$17,062,500.

The following figure were compiled by the American Beet Sugar Company, giving the production for California for the campaign of 1915:

		Bags of 100 lbs
American Beet Sugar Co.....	Oxnard and Chino.....	1,093,758
Anaheim Sugar Co.....	Anaheim.....	204,632
Alameda Sugar Co.....	Alvarado.....	127,279
Holly Sugar Co.....	Huntington Beach.....	342,717
Los Alamitos Sugar Co.....	Los Alamitos.....	262,044
San Joaquin Valley Sugar Co.....	Visalia.....	43,572
Santa Ana Co-Operative Sugar Co.....	Santa Ana.....	277,135
Southern California Sugar Co.....	Santa Ana.....	110,000
Spreckels Sugar Co.....	Spreckels.....	1,181,203
Union Sugar Co.....	Betteravia.....	265,285
Total.....		3,907,625
Tons.....		195,381.25

The State Board of Equalization reports the total acreage of sugar beets in 1915 as 118,034. The leading counties being: Orange, 35,000 acres; Monterey, 23,195 acres; Ventura, 14,800 acres; San Luis Obispo, 12,000 acres; Alameda, 10,300 acres.

The plant at Spreckels, in Monterey County, is said to be the largest beet sugar factory in the world.

Beet Sugar Production in California — Tons of 2,000 Pounds

Year	Tons	Year	Tons
1889.....	2,457	1903.....	65,360
1890.....	3,351	1904.....	59,147
1891.....	5,224	1905.....	64,251
1892.....	10,761	1906.....	94,285
1893.....	17,420	1907.....	72,889
1894.....	18,615	1908.....	99,613
1895.....	23,827	1909.....	126,621
1896.....	31,815	1910.....	144,747
1897.....	35,280	1911.....	162,538
1898.....	18,086	1912.....	155,432
1899.....	42,100	1913.....	169,258
1900.....	30,319	1914.....	168,792
1901.....	68,700	1915.....	203,200
1902.....	73,761		

THE AVOCADO

While the raising of avocados is still in its infancy it promises to become a popular industry in the State. According to the report of the California Avocado Association, there are 6,790 budded trees planted in orchard form. Of this number probably not more than 2,000 are of first-class marketable varieties. There are 35,692 trees in nursery stock, 20,000 of which will be planted this year. The better known trees in the vicinity of Los Angeles bear from 500 to as high as 3,000 fruits each, which sold for prices ranging from 50 cents to \$1 each, so that the profits ranged from \$400 to approximately \$2,000 per tree. Under present conditions large planting of nursery stock is not possible because of the fact that Mexican seed cannot be imported. It will be three or four years before the production of avocados of good variety will begin to increase rapidly as the orchards will not come into full bearing until that time. The general opinion is that market will increase as rapidly as the production.

CALIFORNIA TOBACCO

Success in the commercial production of tobacco under the exceptional climatic conditions of California has hitherto awaited new methods of curing, and it is now claimed that these have been evolved.

Extensive experiments are being made by Mr. J. D. Culp, who is planting small tracts in many different localities for the purpose of determining the adaptability of various kinds, to prevailing conditions such as winds, fogs and dews and length and time of proper seasons.

Tobacco grown in California by Mr. Culp, placed on exhibition in the Agricultural Building at the Panama-Pacific International Exposition, was awarded a gold medal.

CALIFORNIA DATES

Mr. W. L. Paul, of the Coachella Valley Date Growers' Association, reports that the production of dates in California in 1915 was about 50,000 pounds. They found a ready market at the standard price of \$1 per pound. The Deglet Noor palms often have a production of from 100 to 150 pounds per tree. The quality of the fruit and its sugar content surpasses the same variety grown in its original home in the oases of the Sahara. All the fruit in this valley matures and has a pure sugar content ranging from 54% to 70%, which keeps the fruit indefinitely. There are now growing in Coachella Valley about 40,000 imported palms and nearly one million seedling palms. This industry has passed beyond the experimental stage and development will be carried on rapidly.

HONEY IN CALIFORNIA

California is the banner honey producing State of the Union. According to the thirteenth United States Census, California produced three times as much honey as her nearest competitor, Texas.

The total honey crop for the State for 1915 was 500 carloads or a total of 15,000,000 pounds. The price was forced down by the European war and ranged from 3 cents to 7 cents per pound. Taking 5 cents as an average, the total value of honey was \$750,000.

While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the southern counties and from the San Joaquin Valley. The Sacramento Valley and the counties north are rapidly developing into first-class bee territory, one apiarist above Sacramento securing as much as 200 tons of honey in 1915.

About four-fifths of the State's entire output of honey is of first and second quality, being produced principally from the sages, alfalfa, orange, carpet-grass, wild alfalfa and other excellent honey plants.

According to the "Western Honey Bee," there are 7,000 beekeepers in the State, owning more than 600,000 colonies of bees and adding to the wealth of the State more than two and a half million of dollars annually.

The future of the bee industry is bright. The beekeepers are becoming well organized, the University of California is aiding them in the matter of education and research, and the State Market Commission is endeavoring to assist them in the distribution of their crops.

(The above information was supplied by Mr. M. C. Richter, a prominent beekeeper.)

Estimates of the Honey Production

Year	Pounds	Year	Pounds
1899.....	2,822,000	1907.....	8,700,000
1900.....	2,208,000	1908.....	5,250,000
1901.....	8,112,000	1909.....	11,532,000
1902.....	5,125,000	1910.....	4,080,000
1903.....	8,400,000	1911.....	9,500,000
1904.....	7,000,000	1912.....	4,710,000
1905.....	9,500,000	1913.....	3,720,000
1906.....	5,250,000	1914.....	10,500,000
		1915.....	15,000,000

THE MINERAL INDUSTRY

The preliminary estimate of the mineral production of California for the year 1915, as compiled by the statistical division of the State Mining Bureau, shows an increase of approximately half a million dollars in the total value over the preceding year. A comparison of the figures given in the tabulation, with those for the year 1914 shows several unusual features. All, with the possible exception of gold, more or less attributable primarily to the disturbed commercial conditions resulting from the war in Europe, according to the State Mineralogist, Mr. F. McN. Hamilton. Particular attention is called to the increase of zinc output from a value of \$20,381 in 1914, to over a million and a half in 1915. While there is an apparent increase in the production of quicksilver, the total number of flasks of quicksilver produced in 1915 was practically the same as in 1914, but the value averaged nearly double.

The six years ending December 31, 1915, show values as follows:

Total Value of Mineral Output

1910.....	\$38,419,079	1913.....	\$98,644,639
1911.....	87,497,879	1914.....	93,709,630
1912.....	91,472,385	1915.....	93,973,691

Mineral Industry in California, 1914-1915

(State Mining Bureau.)

Substance.....	1914	1915*
Antimony.....		\$26,000
Asbestos.....	\$1,530	2,800
Barytes.....	3,000	620
Bituminous Rock.....	166,618	121,468
Borax.....	1,483,500	1,663,521
Brick.....	2,288,227	2,250,000
Cement.....	6,558,148	5,972,988
Chromite.....	9,434	50,000
Clay.....	167,552	165,000
Coal.....	28,806	26,670
Copper.....	4,055,375	7,660,000
Feldspar.....	16,565	9,000
Fuller's Earth.....	5,928	2,500
Gems.....	3,970	3,040
Gold.....	20,775,000	22,850,000
Graphite.....		
Gypsum.....	78,375	40,000
Infusorial Earth.....	80,350	85,000
Iron Ore.....	5,128	2,600
Lead.....	183,198	295,000
Lime.....	378,663	375,000
Limestone.....	517,713	520,000
Magnesite.....	114,380	282,000
Manganese.....	1,500	30,000
Marble.....	48,832	33,000
Mineral Paint.....	847	1,756
Mineral Water.....	476,169	470,000
Natural Gas.....	1,049,470	1,050,000
Petroleum.....	47,487,109	40,140,000
Platinum.....	14,800	15,000
Potash.....	460	5,000
Pumice.....	1,000	1,000
Pyrites.....	230,058	293,148
Quartz Rock.....	4,800	2,580
Quicksilver.....	557,846	1,070,000
Salt.....	583,553	310,000
Sand, Glass.....	17,888	20,000
Sandstone.....	45,322	5,000
Silver.....	814,230	1,095,000
Soapstone and Talc.....	4,500	9,000
Soda.....	115,396	100,000
Stone, miscellaneous.....	4,860,357	4,800,000
Tungsten Ore.....	180,575	500,000
Zinc.....	20,381	1,620,000
Totals.....	\$93,436,553	\$93,973,691

*Estimated.

PETROLEUM IN CALIFORNIA

As will be seen from the foregoing tabulation, the petroleum output shows a decrease from over \$47,000,000 in 1914 to approximately \$40,000,000 in 1915. The State Mining Bureau attributes this to a number of causes, principally the war and over-production. The yield during 1915 decreased to approximately 90,000,000 barrels, and the price per barrel averaged about $1\frac{1}{2}$ cents less than in 1914. The producing wells increased to 6,500 in number, but the average yield per well per day dropped from 47 barrels in 1914 to 39 barrels in 1915. The amount of oil in storage also decreased from 58,300 barrels in January to 57,000,000 barrels in December, which showed the first decline in stocks since 1907.

In the following table the California figures are supplied by the State Mining Bureau, while the production of the United States is taken from the report of the United States Geological Survey:

Year	California (barrels)	United States (barrels)	Year	California (barrels)	United States (barrels)
1900.....	4,329,950	63,620,529	1908.....	48,306,910	178,527,355
1901.....	7,710,315	69,389,194	1909.....	58,191,723	183,170,874
1902.....	14,356,910	88,766,916	1910.....	77,697,568	209,556,048
1903.....	24,340,839	100,461,337	1911.....	84,648,157	217,000,000
1904.....	29,736,003	117,080,960	1912.....	89,689,250	222,935,044
1905.....	34,275,701	134,717,580	1913.....	98,494,532	248,446,230
1906.....	32,624,000	126,493,936	1914.....	102,881,907	265,762,535
1907.....	40,311,171	166,095,335	1915.....	89,725,779	267,400,000

California holds first rank among the States of the Union in the production of petroleum.

The following table, prepared by the United States Geological Survey shows the marketed production of petroleum in 1914, and an estimate of the corresponding production in 1915 in the eight principal producing States:

State	Production by barrels	
	1914	1915
California.....	99,775,327	89,000,000
Oklahoma.....	73,631,724	80,000,000
Texas.....	20,068,184	26,000,000
Illinois.....	21,919,749	18,500,000
Louisiana.....	14,309,435	18,500,000
West Virginia.....	9,680,033	9,000,000
Pennsylvania.....	8,170,335	8,700,000
Ohio.....	8,536,352	7,900,000

The following figures are supplied by the State Mining Bureau:

Total production for the United States.....	1913	248,446,230 barrels
Total production for the United States.....	1914	265,762,535 barrels
Total value for the United States.....	1913	\$237,121,388
Total value for the United States.....	1914	214,125,215

The Latest Figures Furnished by the California State Mining Bureau on the Production of Oil by Counties

The present extent of proved oil land in California has just been determined by the State Mining Bureau and the most detailed information ever given on the subject. The total is 126 square miles, or 80,702 acres, of which Kern County alone has 55,842 acres. Fresno County is second on the list with 12,218 acres, and Santa Barbara County third with 6,030 acres. It is worthy of notice that the total area of proved oil land is most insignificant in comparison with the area of the entire State, being less than one-thousandth part, and yet the oil business is one of the State's most important industries.

The oil comes from eight different counties, the largest amount being from Kern County with 53,041,069 barrels and 3,873 producing wells, while second on the county list is Fresno with 13,641,325 barrels and 830 wells, and third place falls to Orange County with 12,535,457 barrels and 414 wells. The remaining counties in order are Santa Barbara 5,450,534 barrels and 403 wells; Los Angeles 2,673,598 barrels and 564 wells; Ventura 872,020 barrels and 318 wells; Santa Clara 16,617 barrels and 7 wells, and San Luis Obispo 10,000 barrels and 3 wells.

The natural gas which was marketed has also been accounted for, giving a total of 14,902,000,000 cubic feet, over 90% of which was from Kern County.

In the following tables the 1914 figures were supplied by the State Mining Bureau, while the figures for 1915 were taken from the Mining and Oil Bulletin of Los Angeles:

Production by Fields

Field	1914 Bbls.	1915 Bbls.	Inc. + Dec. -
Kern River.....	7,227,422	8,094,673	867,251+
McKittrick.....	3,871,352	3,585,899	285,453-
Midway-Sunset.....	49,408,493	39,621,003	9,787,490-
Lost Hills-Bellridge.....	4,825,366	4,310,476	514,890-
Coalinga.....	15,952,190	13,567,380	2,384,810-
Santa Maria-Lompoc.....	4,266,387	4,493,575	227,188+
Ventura Co.-Newhall.....	943,929	1,028,106	84,177+
Los Angeles-Salt Lake.....	2,456,937	2,094,194	362,743-
Whittier-Fullerton.....	13,860,431	12,874,670	985,761-
Summerland.....	59,400	55,800	3,600-
Watsonville.....	10,000	.....	.....
Total.....	102,881,907	89,725,776	13,146,131-

THE FORESTS OF CALIFORNIA

According to the California Forest Protective Association the forest area of California is approximately 16 million acres, of which 11 million acres belong to the government and 5 million acres to private owners. Of this area there is a stand of merchantable timber of approximately 300 billion feet, of which one-third is owned by the government and two-thirds by private owners. This is the supply of raw material for the lumbering industry and other forest products of the State.

The lumber industry is carried on by 225 sawmills scattered throughout the forest regions of the State and bringing the benefits of industry and employment to many small communities. According to the census of 1910 these sawmills employed 25,000 men and paid 15 million dollars annually in wages. Investigations made by the United States Forest Service show that over 70% of the value of all forest products is paid in wages and at least 15% is paid for materials, supplies, taxes, etc.

The total production of lumber in California decreased from 1,185,000,000 board feet in 1914 to 1,002,000,000 board feet in 1915. In 1906 the total production was 1,348,500,000 board feet, since which time the output has decreased to approximately 1,000,000,000 feet in 1915. While the annual output of lumber has steadily decreased, the average selling price of lumber at the mills has also decreased from \$15.11 per thousand in 1906 to \$14.79 in 1914. During the same time the cost of production, on account of higher wages, increased from \$11.05 to \$12.95 per thousand.

In 1914 the amount of redwood cut was 425 million feet, while in 1915 the amount was 355 million feet. This was a decrease of 70 million feet or over 16%. In 1914 the production of western white pine, Douglas fir, sugar pine, white fir, spruce, cedar, western hemlock, oak, ash and other kinds of lumber was 760 million feet and in 1915 the production was approximately 647 million feet, showing about the same decrease as redwood.

Lumber Cut in California for Years from 1880 to 1915

(Report of California Forest Protective Association.)

	Feet		Feet
1880.....	304,795,000	1909.....	1,144,000,000
1890.....	515,823,000	1910.....	1,254,826,000
1900.....	734,232,000	1911.....	1,207,000,000
1905.....	1,077,499,000	1912.....	1,203,059,000
1908.....	1,348,599,000	1913.....	1,183,380,000
1907.....	1,345,943,000	1914.....	1,185,000,000
1908.....	966,115,000	1915.....	1,002,000,000

Kinds of Lumber Cut in California

(1915 figures "Pioneer Western Lumberman.")

Kinds	1910 Feet	1914 Feet	1915 Feet
Redwood.....	600,000,000	425,000,000	418,824,000
Western pine or white.....	350,000,000	450,000,000	389,637,000
Douglas fir.....	110,000,000	50,000,000	117,680,000
Sugar pine.....	100,000,000	150,000,000	114,494,000
White fir.....	60,000,000	75,000,000	50,720,000
Spruce.....	30,000,000	10,000,000	9,447,000
Cedar.....	15,000,000	20,000,000	12,185,000
Western hemlock.....	1,000,000	1,000,000	4,537,000
Oak.....	1,000,000	1,000,000	12,000
Ash and other.....	3,000,000	3,000,000	.....
*Oak (imported).....	.....	.....	790,000
*Birch (imported).....	.....	.....	120,000
*Genisero (imported).....	.....	.....	5,000
*Spanish Cedar (imported).....	.....	.....	52,000
Eucalyptus (native).....	.....	.....	200,000
	1,270,000,000	1,185,000,000	1,118,703,000

*Logs imported and sawed in this State.

The annual timber output of the State is approximately 1,200,000,000 board feet, almost evenly divided between redwood and pine. In connection with the other Pacific States, it supplies about 20% of the raw material for the wood manufacturing industries of the nation.

Receipts of Lumber at San Francisco in 1915

Year	California	Ore. and Wash.	Rail	Total
1915.....	226,044,000	504,519,000	14,186,000	744,749,000
1914.....	281,569,000	614,240,000	15,150,000	910,959,000
1913.....	303,872,000	721,154,000	20,885,000	1,045,911,000
1912.....	340,257,000	652,307,000	22,143,000	1,014,707,000
1911.....	324,251,000	634,251,000	.....	958,502,000
1910.....	332,499,000	675,145,000	.....	1,007,594,000
1909.....	324,913,000	651,469,000	.....	976,382,000
1908.....	298,780,000	582,524,000	.....	881,304,000

California Redwood

It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "clear lumber." The redwood (*Sequoia sempervirens*) is indigenous to California, and except for a few stunted trees in Japan

is found in no other country. The trees of the Sequoia family are the oldest and largest known. The wood takes a distinct and beautiful finish, which makes it valuable for interior use of all kinds. Being free from resin, it is especially resistant to fires and decay, making it especially valuable for siding, shingles and wherever exposed to moisture.

The redwood belt extends from the California-Oregon line southerly along the coast about 240 miles, a narrow belt 10 to 30 miles wide; on the west is the Pacific Ocean and on the east the divide of the low Coast Range.

Annual Shipments of Redwood

The following figures furnished by the "Pioneer Western Lumberman," give the annual shipments of redwood from the California mills north of San Francisco bay:

	Feet		Feet
1900.....	209,001,922	1908.....	356,549,880
1901.....	244,386,075	1909.....	402,519,307
1902.....	262,597,015	1910.....	446,097,661
1903.....	301,343,953	1911.....	444,925,773
1904.....	324,676,960	1912.....	477,330,460
1905.....	347,679,159	1913.....	404,583,279
1906.....	409,702,576	1914.....	430,520,000
1907.....	437,514,653	1915.....	354,131,000

To the above cut should be added approximately 100,000,000 feet going into shingles, shakes, split ties, posts, pickets, etc., and at least 25,000,000 feet manufactured south of San Francisco.

The redwood shipments from Humboldt, Del Norte and Mendocino Counties for the calendar year 1914 were reported by another authority as being 430,520,000 feet. The greater part of this was shipped to California points, the rest going to Mexico, Central and South America, the Hawaiian Islands, Australia and other points. The mills which produced the above amount of redwood also shipped, during 1914, 58,249,000 feet of fir, all of which was consumed in California.

The redwood is peculiarly the poor man's timber and with a few tools he can make a living while clearing his land. Owing to its straight grain and easy splitting qualities, expensive saw-mills and logging outfits are not necessary for putting the timber into marketable condition.

A falling axe, wedges and broad-axe enable the individual worker to fell and work the great trees into ties, posts, shakes, pickets and grape stakes, all of which products find a ready market at remunerative prices at the nearest shipping point.

Another product of the so-called redwood belt is the bark from tan oak, of which about 30,000 cords are peeled annually, with a value of from \$450,000 to \$600,000 at the shipping point.

California Pine

The Sierra Nevada Mountains are the home of the pine. The pine forests of California extend from Kern County 350 miles to the northern boundary of the State in the Sierra Nevada Mountains, with an average width of perhaps twenty miles, and from Napa County to the northern boundary of the State on the eastern slope of the Coast Range. There are also small areas in the San Bernardino Mountains.

The total area of merchantable pine timber is approximately 8,000 square miles. The most valuable trees are the sugar pine (*Pinus lambertiana*), the white pine (*Pinus ponderosa*) and the Jeffrey pine. Other valuable trees which occur in these forests are Douglas fir, white fir, spruce, cedar and Western hemlock.

The woods from these trees are meeting with a steadily increasing demand in the wood manufacturing industries of this country and the entire world. They are unsurpassed for doors, sashes, interior finish, flooring, ceiling, patterns, piano key boards, lead pencils and for many other purposes where strength, durability, stability, ease in working and beauty of finish are required.

There are many great plants in all parts of the State. The great railroad lines carry their product to every part of the United States. The work of lumbering is practically the same as in the redwood districts, steam machinery as a rule getting the logs to the mills, although in some instances ox-teams are still used. Here, as in the redwood country, there are immense log ponds where the logs are stored away for the mills. The cut has run from 400,000,000 to 500,000,000 feet a year.

Federal aid has been asked in the effort to quarantine the forests of white and sugar pine from a disease known as rust blister now prevalent in Europe. This is of especial interest to California where there are over three million acres of the most valuable sugar pine on the Pacific Coast.

Saw-Mills

According to the official and most reliable lumber authorities, there are about 650 saw-mills scattered through the timber sections of the State. These saw-mills employ over 25,000 men, and pay over \$16,000,000 in wages. They expend over \$18,000,000 for materials, \$6,000,000 for supplies, and \$2,000,000 for taxes.

The total value of the products was \$45,000,000, which was nearly 50 per cent greater than the output of the canning and preserving industry, the next greatest manufacturing industry.

National Forests in California

California contains eighteen National Forests, comprising a total area of about 19,575,000 acres (National Forests are distinct from National Parks), according to U. S. District Forester DuBois, who is charged with the administration of the National Forests in this State. In these forests stand about 119,000,000,000 feet of timber, principally pine, fir and cedar, having an estimated value of \$250,000,000. About 60,000,000 feet of this timber is cut annually to fill the normal demand. Much of the public forest is at present inaccessible and will come on the market naturally with the increase in California's population and the more intensive development of her resources.

In the fiscal year ending 1915, 186,999 head of cattle and horses and 400,103 head of goats and sheep foraged within these forests. Permits for other uses to a total of 1,775, such as apiaries, corrals, restaurants, pipe lines, etc., and summer home, permanent camp and resort sites, which are leased by the Forest Service for long periods at nominal sums, produced a revenue of \$19,488.07.

Within the forests hydro-electric plants, entirely or partly on forest lands, had a total installed capacity of 265,420 horse power, and permits had been issued for these and other sites which, it was estimated, would produce 460,000 continuous horse power under low water conditions.

Forest Protection

About \$883,000 is spent annually in administering and protecting these forests. During the fiscal year ending June 30, 1915, permanent improvements, including 230 miles of trails and 428 miles of telephone lines were built at a cost of \$93,398. The Government Forest systems now aggregate 3,271 miles of trails and 4,067 miles of telephone lines.

Each National Forest is under the immediate control of a Forest Supervisor. For purposes of administration and protection, the forests are divided into ranger districts, each in charge of a District Ranger. Under the District Rangers are the protection forces—Lookouts, Patrolmen and Forest Firemen. The lookouts, stationed upon high peaks, report fires to the District Ranger by telephone or heliograph.

Rangers, patrolmen and firemen employed by the Forest Service in California during the summer of 1915 totaled 555, with fire detection service performed by 85 lookout men. In addition about 500 men—mountaineers, miners and lumbermen—were registered with the Forest Service as volunteers to be called out in emergencies. Eighty patrolmen, paid by private owners of timber within the forest, worked under the supervision of and in co-operation with the Forest Service. During the fiscal year

of 1915, about \$40,000 was contributed by railroads, lumber companies, municipal organizations, counties and private citizens for fire protection, and spent through co-operative agreements with the Forest Service on 4,000,000 acres of timber land and valuable watersheds.

Although in 1915, a season of great fire hazard, a total of 1,525 fires was reported and extinguished, the damage done within the National Forests of the State was but \$7,374, a sum far less than the average for previous years.

MANUFACTURING

(U. S. Census Report, 1910.)

Summary for the State, 1909

	Census, 1909	Per cent of increase 1904-1909
Number of establishments.....	7,659	12
Capital.....	\$537,134,000	90
Cost of materials used.....	\$325,238,000	51
Salaries and wages.....	\$107,097,000	35
Miscellaneous expenses.....	\$ 43,819,000	61
Value of products.....	\$529,761,000	44
Value added by manufacture (products less cost of materials).....	\$204,323,000	35
Employees—		
Number of salaried officials and clerks.....	18,203	48
Average number of wage earners employed during the year...	115,296	15
Primary horsepower.....	329,100	56

Following are tables compiled to show the growth of manufacturing between 1850 and 1909:

Capital Invested

Value of Products

Year	Amount	Increase over previous decade	Year	Amount	Increase over previous decade
1850.....	\$1,006,197	.....	1850.....	\$12,862,522	.....
1860.....	22,043,096	2097.7	1860.....	68,253,228	430.6
1870.....	39,728,202	80.2	1870.....	66,549,566	—2.4
1880.....	61,243,784	54.2	1880.....	116,218,973	74.5
1890.....	146,797,102	139.7	1890.....	213,403,996	83.6
1900.....	205,395,025	39.9	1900.....	302,874,761	41.9
1909.....	537,134,000	161.5	1909.....	529,761,000	74.8

	San Francisco		Los Angeles		Oakland		Sacramento	
	Census 1909	Per cent increase 1904-'09	Census 1909	Per cent increase 1904-'09	Census 1909	Per cent increase 1904-'09	Census 1909	Per cent increase 1904-'09
Number of establishments.....	1,795	—20	1,325	63	441	78	211	35
Capital.....	\$133,760,000	31	\$59,518,000	111	\$19,113,000	109	\$10,097,000	37
Cost of materials used.....	78,175,000	"	38,913,000	108	11,847,000	175	6,893,000	34
Salaries and wages.....	30,452,000	—4	16,500,000	82	6,618,000	167	4,534,000	34
Miscellaneous expenses.....	13,053,000	5	5,649,000	106	2,094,000	145	1,356,000	77
Value of products.....	132,929,000	—4	68,586,000	97	22,343,000	148	13,977,000	39
Value added by manufacture (products less cost of materials).....	56,754,000	—8	29,673,000	84	10,496,000	123	7,084,000	44
Employees:								
Number of salaried officials and clerks.....	6,116	18	3,367	68	1,079	177	533	42
Average number of wage earners employed during year.....	28,239	—27	17,327	66	6,905	106	4,514	7

—Decrease.

*Less than one per cent increase.

Other Principal Manufacturing Points

	Fresno	Stockton	San Jose	Richmond	San Diego	Eureka
Establishments.....	76	144	153	25	117	48
Capital.....	\$4,933,000	\$8,250,000	\$3,815,000	\$14,550,000	\$5,226,000	\$3,306,000
Salaries and wages.....	\$1,431,000	\$1,681,000	\$1,152,000	\$2,760,000	\$1,069,000	797,000
Wage earners.....	1,926	1,594	1,430	2,420	1,071	946
Value of output.....	\$11,090,000	\$11,849,000	\$5,610,000	\$11,250,000	\$4,741,000	\$3,012,000

NOTE—Pending the next taking of the Manufacturing Census by the Government, it is safe to estimate that the above figures have increased from 15 to 25 per cent.

CALIFORNIA'S WATER-POWER RESOURCES

Closely connected with the future of manufacturing development are the fuel and the water-power supply capable of being converted into electrical power. The statistics of the State's wonderful oil production, given on a preceding page, show the abundance of cheap fuel. The following extract from Water Supply Paper No. 234, in the report of the U. S. Geological Survey, shows that the development of hydro-electric power has only begun.

California's Water-Power, 1909

Developed			Undeveloped		
Source	Wheels	Horse-power		Minimum	Maximum Development
Sacramento River.....	576	280,735	Sacramento River.....	2,420,000	4,580,000
San Joaquin River.....	159	86,224	San Joaquin River (including Tulare Lake drainage).....	759,000	3,140,000
Minor streams, southern..	74	50,183	Minor streams, northern	600,000	1,200,000
Minor streams, northern..	176	25,440	Sierra Nevada drainage	132,000	202,000
Sierra Nevada drainage..	74	17,737	Minor streams, southern	36,400	88,300
San Francisco Bay.....	11	6,455			
Totals.....	1,070	466,774	Totals.....	3,947,000	9,210,300

It is calculated that the hydro-electric development since that date has raised the aggregate to 584,511 horse-power. The steam-electric plants are estimated at 355,525 horse-power—less than a million horse-power in all.

The following table, compiled from data supplied by Mr. F. H. Fowler, District Engineer of the U. S. Forest Service, illustrates the speed of recent development:

Hydro-Electric Plants in California

Year	No. of Plants	K. W.	Capacity equal H. P.	Year	No. of Plants	K. W.	Capacity equal H. P.
1892.....	1	480	643	1904.....	41	88,465	118,586
1893.....	2	1,230	1,649	1905.....	50	100,115	134,216
1894.....	2	1,230	1,649	1906.....	54	122,265	163,894
1895.....	4	5,730	7,681	1907.....	58	161,465	216,441
1896.....	7	8,190	10,978	1908.....	67	238,985	320,355
1897.....	9	12,440	10,978	1909.....	69	248,285	332,808
1898.....	15	20,715	27,768	1910.....	71	293,095	392,889
1899.....	19	27,175	36,427	1911.....	71	298,595	400,261
1900.....	20	28,695	38,478	1912.....	72	308,295	413,264
1901.....	23	38,015	50,958	1913.....	78	420,045	563,063
1902.....	27	51,565	69,122	1914.....	79	436,045	584,511
1903.....	33	65,075	87,232	1915.....	76	434,900	582,750

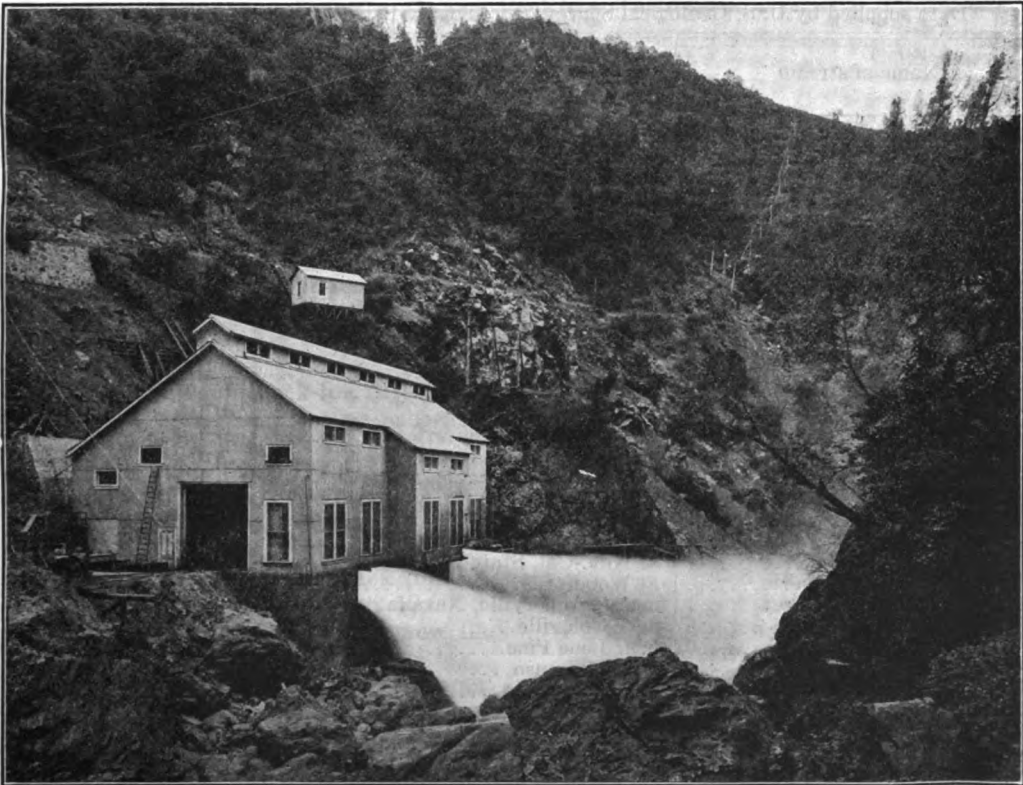
The above figures include not only the hydro-electric plants actually in California but several small plants which are just over the line in Oregon and Nevada, and which are attached to hydro-electric transmission systems partly in California. The slight falling off in installed capacity from 1914-1915 is due to the abandonment of small plants which had outlived their usefulness and had been superseded by more efficient installation.

In addition to the figures given, which represent water-power plants alone, there were at the end of 1915 forty-one steam-electric auxiliary plants on the above systems, with a total installed capacity of 281,350 kilowatts or 377,000 horse-power, giving a grand total of 117 plants with 716,250 kilowatts or 959,750 horse-power.

The following is taken from an address delivered by Mr. John A. Britton, who is a leading authority on this subject:

The State of California can claim the honor of having been the pioneer in hydro-electric development. The first plant operated in the State followed closely the first one operated in the world, which was at Frankfort-on-the-Main in 1894, and the first commercial hydro-electric high-tension transmission in the State was the plant erected in the town of Folsom and supplying the city of Sacramento; this occurred in the year 1895. The voltage of the line was 11,000; the fall of water 56 feet. Today developments are in operation carrying on lines as high as 150,000 volts, and operating at heads of over 2,000 feet, or at a pressure of approximately 875 pounds per square inch.

California has not hitherto been classed among the States in which manufactures was a leading industry, but with abundant oil for fuel for manufacturing power and motive-power on the one side, and 9,000,000 horse-power in water-power maximum development and a widening of markets both at home and in the Orient, California can face its industrial future with confidence.



HYDRO-ELECTRIC PLANT

California Hydro-Electric Plants in Operation

(On December 5, 1914.)

Company	No. of plants	Date of first Installation	Total installed capacity KVA
California-Oregon Power Co.....	7	1903	10,600
Pacific Gas & Electric Co.....	9	1895	92,870
Northern California Power Co., Consolidated.....	7	1901	21,850
Sierra & San Francisco Power Co.....	3	1898	27,375
Coast Valleys Gas & Electric Co.....			
Great Western Power Co.....	2	1908	40,800
Western States Gas & Electric Co.....	2	1903	4,500
Oro Electric Corporation.....	2	1906	3,000
Snow Mountain Water & Power Co.....	1	1908	6,500
Coast Counties Gas & Electric Co.....	1	1896	810
Tuolumne Electric Co.....	1	1908	600
Utica Gold Mining & Hobart Estate Co.'s.....	1	1898	1,500
Mariposa Mining & Commercial Co.....	1	1905	400
San Joaquin Light & Power Corp.....	4	1897	25,350
Mt. Whitney Power & Electric Co.....	4	1899	8,350
Yosemite Power Co.....	1	1906	900
Pacific Light & Power Corp.....	8	1898	84,350
Southern California Edison Co.....	7	1893	28,500
Ontario Power Co.....	1	1902	750
Holton Power Co.....	2	1906	950
Los Angeles Aqueduct Power.....	3	1908	2,220
Sierra Pacific Electric Co.....	5	1899	8,700
Nevada-California Power Co.....	5	1905	22,250
Southern Sierras Power Co.....			
Pacific Power Co.....	1	1905	3,000

Total Mean Annual Flow of California Streams in Acre-Feet

(Data supplied by U. S. Geological Survey, from Supply Papers and unpublished records.)

Name of stream	Station	Years of record	Run-off in acre-feet
Sacramento River.....	near Red Bluff.....	18	9,770,000
Pit River.....	near Bieber.....	4	589,000
McCloud River.....	near Gregory.....	5	1,840,000
Stony Creek.....	near Fruto.....	11	549,000
Feather River.....	at Oroville.....	10	5,880,000
Yuba River.....	near Smartsville.....	9	3,050,000
Bear River.....	at Van Trent.....	9	364,000
American River.....	at Fair Oaks.....	7	3,820,000
Cache Creek.....	at Yolo.....	10	569,000
San Joaquin River.....	near Friant.....	6	1,930,000
Kern River.....	near Bakersfield.....	18	724,000
Tule River.....	near Portersville.....	11	137,000
Kaweah River.....	near Three Rivers.....	9	506,000
Kings River.....	near Sanger.....	18	1,940,000
Merced River.....	near Merced Falls.....	11	1,250,000
Tuolumne River.....	near LaGrange.....	18	2,070,000
Stanislaus River.....	at Knights Ferry.....	10	1,540,000
Calaveras River.....	at Jenny Lind.....	4	351,000
Mokelumne River.....	near Clements.....	8	988,000
Cosumnes River.....	at Michigan Bar.....	6	398,000
Truckee River.....	at Nev.-Cal. State Line.....	13	798,000
West Fork Carson River.....	at Woodfords.....	11	121,000
East Fork Carson River.....	near Gardnerville, Nevada.....	6	335,000
West Walker River.....	near Coleville.....	6	293,000
Owens River.....	near Lone Pine.....	4	305,000
Sweetwater River.....	near Descanso.....	6	7,900
Santa Ysabel Creek.....	near Escondido.....	5	28,800
Santa Ana River*.....	near Mentone.....	10	75,500
San Gabriel River*.....	near Azusa.....	17	112,000
Arroyo Seco.....	near Soledad.....	11	147,000
Colorado River.....	at Yuma, Arizona.....	11	16,900,000
Link River.....	at Kalamath Falls, Ore.....	9	1,700,000

*Includes canals.

FISHERIES

Both the interior and the coastal waters of California abound in food and game fish, offering inducements both to the pleasure-seeker and the profit-earner.

There are about 165 species of cold-water fauna whose proper home is north of Point Concepcion, and 117 species of semi-tropical fauna found south of Point Concepcion, beyond the reach of the cold currents of the north.

Of these, 133 varieties of food fish are found in the San Francisco markets, including oysters and shell fish.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento basin. Through the work of the Federal and State Commissions, however, the rivers have been re-stocked and now there are more salmon in the Sacramento River than ever before, but they are mostly marketed as fish.

The State maintains seven hatcheries, at one of which, the Sisson hatchery, more trout and salmon fry are hatched than in any other hatchery in the world. There is also one hatchery and two egg-collecting stations under Federal supervision.

The following is a list of seven State hatcheries, with the amount of salmon and trout fry hatched at each, for the year 1914, as reported by the Fish and Game Commission:

Snow Mountain.....	312,000
Ukiah.....	776,000
Price Creek.....	3,815,150
Bear Valley.....	653,000
Brookdale.....	1,141,000
Tahoe.....	2,658,000
Sisson.....	43,164,295
Total.....	52,519,445

Pacific Coast Fishing Industry

Extent of Industry	California
Value of output.....	\$7,500,000.00
Capital employed.....	10,000,000.00
Earnings of labor employed.....	3,000,000.00
Number of persons employed.....	9,000

The Alaska Packers Association maintains two large hatcheries in Alaska, and in 1915 48,524,000 salmon fry were liberated.

Besides the home fisheries, there are employed in packing salmon in Alaska waters and Puget Sound, over fifty San Francisco vessels, many men and a large amount of California capital. The following table shows California's share of the industry, which is very large:

Value of salmon pack for 1915 is approximately \$7,500,000.00.

Canned salmon and other fisheries products are sent by sea from San Francisco to nearly every country in the world. The shipments of canned salmon alone for 1915 had a total value of \$5,791,513.00.

The Alaska Packers Association report their pack for 1915 as 1,024,040 cases.

The California Salmon Packing Companies report their pack for 1915 as 1,453,182 cases.

The California sardine pack during the year 1915, valued at \$300,000, has been reported as amounting to about 50,000 cases. A much larger pack is anticipated this year. The California sardine is now finding a ready market not only in the United States, but in foreign lands.

According to the "Western Canner and Packer" the tuna pack for the season 1915 was a trifle under 350,000 cases, with an approximate value of \$1,573,000, this being a slight increase over the pack of 1914. Several tuna packing companies have enlarged their plants and increased their industry. Demand for this fish has outlived the supply; packers have practically no stock on hand. The tuna is found off the coast of Southern California and most packers agree that the supply is not only limited but uncertain.

RAILWAYS IN CALIFORNIA

During the year 1915 the following mileage was added to steam roads: Chowchilla Pacific Railroad, 11.47; Riverside, Rialto and Pacific Railroad, 12.94; Trona Railway Company, 33.12; Death Valley Railroad Company, 23.07. Total, 80.60.

The San Diego and Arizona Railroad, which will eventually connect Imperial Valley with San Diego, is reported finished from San Diego to Campo via Tia Juana, on the west; and on the east from Holtville to a point this side of the Imperial County line, leaving a gap of about thirty-five miles. This road will bring Imperial Valley one hundred miles nearer tidewater.

Electric lines were extended as follows: Montecito Railroad Company, 1.46; Sacramento Valley Electric Railway, 12.32. Total mileage, 13.78.

The mileage abandoned in 1915 was as follows: Colusa and Lake Railroad Company, 22; Stone Canon Railroad, 22.02. Total mileage, 44.02.

Steam Roads

Operating mileage for the year ending June 30, 1915.

Name of road	Mileage
Southern Pacific Co.	6,239.86
Atchison, Topeka & Santa Fe Railway Co.	2,249.03
Northwestern Pacific Railroad Co.	651.80
San Pedro, Los Angeles & Salt Lake Railroad Co.	511.89
Western Pacific Railway Co.	498.67
Nevada-California-Oregon Railway	243.77
Tonopah & Tidewater Railroad Co.	154.47
Pacific Coast Railway Co.	116.64
Sunset Railway Co.	108.06
McCloud River Railway Co.	100.26
Thirty-five other roads in California	1,088.59
Total	11,963.04

Electric Railways

Name of road	Mileage
Pacific Electric Railway Co.	1,058.92
Los Angeles Railway Corporation	389.08
United Railroads of San Francisco	285.93
San Francisco-Oakland Terminals	258.59
Northern Electric Railway Co.	170.63
Oakland, Antioch & Eastern Railway	110.99
Central California Traction Co.	78.51
Peninsular Railway Co.	81.64
San Diego Electric Railway Co.	70.96
Visalia Electric Railroad Co.	48.82
San Francisco, Napa & Calistoga Railway	44.52
Petaluma & Santa Rosa Railway Co.	43.41
Twenty-one other roads in California	342.82
Total	2,984.82

MOTOR VEHICLE REGISTRATION IN 1915

According to the "Western Motor Record," the total number of motor vehicles registered in California during the year 1915 was 163,800. This showing an increase over the year 1914 of about 41,000. This, of course, includes motorcycles.

SUMMARY OF VALUES

Orchard products:		
Fresh deciduous fruits, not including apples.....	\$18,000,000	
Apples.....	4,360,770	
Citrus fruits.....	31,190,000	
Dried fruits and raisins.....	16,830,000	
Prunes.....	6,720,000	
Canned fruits and vegetables.....	16,152,000	
Olives and olive oil.....	2,750,000	
Nuts.....	4,700,000	
		\$100,702,770
Vineyard products:		
Table grapes.....	\$ 9,514,000	
Raisins.....	10,000,000	
Wine and brandy.....	8,475,000	
		27,989,000
Garden products, fresh.....		9,850,000
Dairy and poultry products:		
Dairy products.....	\$38,377,340	
Poultry products.....	18,205,896	
Honey, wax, etc.....	1,222,000	
		57,805,236
Farm products:		
Barley.....	\$24,453,000	
Wheat.....	6,688,000	
Oats.....	3,482,000	
Corn, rye.....	2,410,000	
Rice.....	2,041,000	
		39,074,000
Farm products (continued):		
Hay and forage.....	\$50,624,000	
Hops.....	2,570,700	
Sugar beets.....	17,062,500	
Broom corn, tobacco, etc.....	230,000	
		70,487,200
Other field crops:		
Potatoes.....	\$12,000,000	
Potatoes, sweet.....	1,400,000	
Beans.....	12,970,000	
Onions.....	3,100,000	
Seeds and sundry others.....	2,500,000	
Melons.....	2,600,000	
Cotton.....	1,822,000	
		36,392,000
Fish industry:		
Coast and interior (tuna and sardines).....	\$1,525,000	
Salmon fisheries, etc.....	7,500,000	
		9,025,000
Forest and lumber products.....		\$35,000,000
Petroleum (89,000,000 barrels).....	40,140,000	
		75,140,000
Mineral products, other:		
Gold.....	\$22,850,000	
Cement.....	5,972,988	
Copper.....	7,660,000	
Other minerals.....	18,588,012	
		55,071,000
Farm animals and their products (other than dairy):		
Production of wool on farms.....	\$2,000,000	
Animals slaughtered on farms.....	2,000,000	
Animals slaughtered other than above.....	31,914,000	
		35,914,000
Nursery and florist products.....		\$4,750,000
Cider, vinegar, etc.....	2,500,000	
		7,250,000
Total.....		\$524,700,206
Manufactures (as reported by Census 1910).....		529,761,000
Manufactures (increase 10%).....		52,976,100
Grand total.....		\$1,107,437,306

NOTE.—Considerable difficulty has been experienced in gathering statistics regarding values but the above is based on conservative estimates from reliable sources.

THE CALIFORNIA DEVELOPMENT BOARD

A Consolidation of
THE CALIFORNIA STATE BOARD OF TRADE
THE MANUFACTURERS AND PRODUCERS ASSOCIATION OF CALIFORNIA
THE CALIFORNIA PROMOTION COMMITTEE
Ferry Building, San Francisco

OFFICERS

Wm. J. Dutton.....	President
A. B. C. Dohrmann.....	Vice-President
Robert Newton Lynch.....	Vice-President and Manager
Wells Fargo Nevada National Bank.....	Depository

EXECUTIVE COMMITTEE

William J. Dutton		
A. B. C. Dohrmann		
Robert Newton Lynch		
Thos. Maclay	James B. Bullitt	
Chester H. Rowell	P. I. Lancaster	
Frederick J. Koster	Thomas Forsyth Hunt	
R. B. Hale	Milton H. Esberg	
N. P. Chipman		
James Irvine		
B. F. Walton		
John P. Irish		

ACTIVE MEMBERS

COUNTY REPRESENTATIVES

Alameda.....	Theo. Gier, Oakland	Monterey.....	Wm. Casey, San Lucas
Butte.....		Napa.....	
Colusa.....		Sacram nto.....	James D. Devine, Sacramento
Contra Costa.....	Frank T. Swett, Martinez	San Benito.....	
Del Norte.....	Warren Tryon, San Francisco, 519 Mer. Nat. Bank	San Diego.....	W. M. Irwin, San Diego
El Dorado.....		San Joaquin.....	James Y. Coates, Stockton
Fresno.....		San Mateo.....	Frank L. Ekward, San Mateo
Glenn.....	Mack C. Coats, Ferry Bldg., San Francisco	Santa Clara.....	Joseph T. Brooks, San Jose
Humboldt.....	William S. Clark, Eureka	Shasta.....	
Kern.....	Thomas F. Burke, Bakersfield	Skrlano.....	Thomas Smith, Vallejo
Kings.....	A. G. Robinson, Hanford	Sonoma.....	Dr. Thomas Maclay, Petaluma
Lassen.....		Stanislaus.....	George T. McCabe, Modesto
Los Angeles.....	H. G. Osborne, Los Angeles	Sutter.....	M. C. Coats, Ferry Building, San Francisco
Madraa.....	Walter C. Maloy, Madera	Tehama.....	N. P. Chipman, Sacramento
Mendocino.....	P. I. Lancaster, Willits	Tulare.....	Arthur E. Miot, Visalia
Merced.....	W. N. Harris, Merced	Yolo.....	
Modoc.....		Yuba.....	M. C. Coats, Ferry Building, San Francisco

INDIVIDUALS, FIRMS AND CORPORATIONS—REPRESENTATIVES

Anglo & London Paris National Bank.....	C. F. Hunt, Sansome and Sutter Streets
Balfour, Guthrie & Company.....	360 California Street
Bank of California National Association.....	Chas. K. McIntosh, California and Sansome Streets
Brewers' Protective Association.....	J. A. Hieronimus, care Union Brewing and Malting Co., 18th and Florida Streets
Brandenstein, M. J., & Co.....	126 Mission Street
Britton, John A.....	445 Sutter Street
California & Hawaiian Sugar Refining Co.....	230 California Street
California Barrel Company.....	Fred. J. Koster, 22nd and Illinois Streets
California Fruit Cannery Association.....	120 Market Street
California Pine Box and Lumber Company.....	G. X. Wendling, Flood Building
Canadian Bank of Commerce.....	450 California Street
Commercial Union Assurance Company.....	558 Sacramento Street
Crocker National Bank.....	J. B. McCargar, Crocker Building
Emporium, The.....	Wm. Kaufmann, Market near 4th Street
Fireman's Fund Insurance Company.....	Wm. J. Dutton, Insurance Exchange Building
First National Bank of Los Angeles.....	Los Angeles
First National Bank of San Francisco.....	C. H. McCormick, Montgomery and Post Streets
Fuller, W. P., & Company.....	F. W. Fuller, 301 Mission Street
German Savings and Loan Society, The.....	Geo. Tourney, 526 California Street
Goodyear Rubber Company.....	587 Market Street
Gunst, M. A., & Company.....	Milton Esberg, California and Front Streets
Hale Brothers, Inc.....	R. B. Hale, Market and Fifth Streets
Hellman, Jr., I. W.....	Union Trust Co. of San Francisco, Grant Avenue and Market Streets
Hibernia Savings and Loan Society, The.....	R. M. Tobin, Jones and McAllister Streets
Hooper, C. A., & Company.....	Balboa Building
Hotel St. Francis.....	James Woods, Geary and Powell Streets
Klink, Bean & Company.....	Kohl Building
Matson Navigation Company.....	268 Market Street
Mercantile National Bank of San Francisco.....	W. F. Berry, 424 California Street
Metson, William H.....	Milton Bernard, 501 Balboa Building
Miller & Lux, Inc.....	Merchants Exchange Building
Mission Bank, The.....	16th and Julian Avenue
Moore-Watson Dry Goods Company.....	7-33 Front Street
Nathan-Dohrmann Company.....	A. B. C. Dohrmann, Geary and Stockton Streets
Pacific Gas & Electric Company.....	L. F. Walsh, 445 Sutter Street
Palace Hotel.....	New Montgomery and Market Streets
Pope & Talbot.....	Foot of Third Street
Rollins, E. H., & Sons.....	D. H. Dibblee, First National Bank Building
San Joaquin Light & Power Corporation.....	A. G. Wishon, H and Tulare Streets, Fresno
San Joaquin Valley Bank.....	Stockton

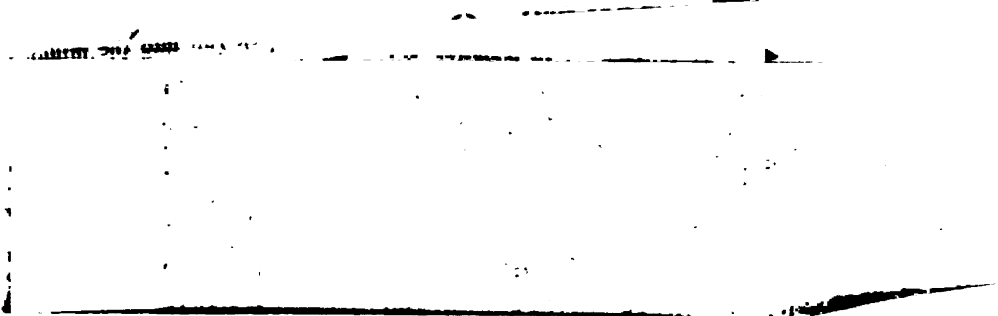
INDIVIDUALS, FIRMS AND CORPORATIONS—REPRESENTATIVES—Continued.

Savings Union Bank & Trust Company.....	John S. Drum, Grant Avenue and O'Farrell Streets
Schilling, A., & Company.....	2d and Folsom Streets
Schmidt Lithograph Company.....	2nd and Bryant Streets
Shreve & Company.....	Shreve Building
Spreckels, J. D. and A. B., Securities Company.....	60 California Street
Standard Oil Company.....	W. S. Rheem, 461 Market Street
Tillmann and Bendel.....	Carl H. Schmidt, Pine and Davis Streets
Union Iron Works Company.....	20th and Minnesota Streets
Union Lumber Company.....	Crocker Building
Wellman-Peck & Company.....	311 Embarcadero
Wells Fargo Nevada National Bank.....	Col. J. P. Irish, Oakland
Western Meat Company.....	6th and Townsend Streets
Western Pipe & Steel Company.....	444 Market Street
Dr. Thomas F. Hunt, University of California.....	Berkeley
Rowell, Chester H.....	Fresno
Irvine, James.....	Crocker Building
Dr. James B. Bullitt.....	San Jose

HONORARY MEMBERS

Hiram W. Johnson.....	Governor of California
John M. Perry.....	President State Board of Agriculture, Stockton
David Starr Jordan.....	President Leland Stanford, Jr., University, Palo Alto
Benjamin Ide Wheeler.....	President University of California, Berkeley
Luther Burbank.....	Santa Rosa
A. J. Cook.....	State Horticulturist, Sacramento
Judge N. P. Chipman.....	California Appellate Court, Sacramento
Colonel John P. Irish.....	Oakland
E. W. Maslin.....	San Francisco
F. McN. Hamilton.....	State Mineralogist, San Francisco
J. A. Filcher.....	San Francisco
J. N. Gillett (former President California Development Board).....	525 Market Street

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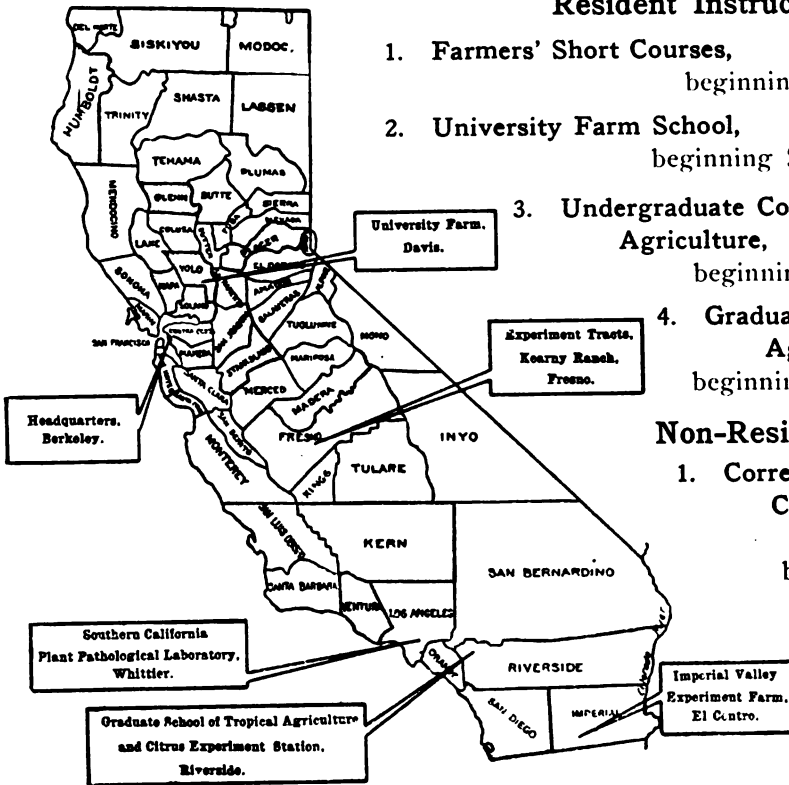
RESEARCH AND INSTRUCTION

Resident Instruction

1. Farmers' Short Courses,
beginning October 2, 1916.
2. University Farm School,
beginning September 5, 1916.
3. Undergraduate Courses in
Agriculture,
beginning August 8, 1916.
4. Graduate Courses in
Agriculture,
beginning August 8, 1916.

Non-Resident Instruction

1. Correspondence
Courses in
Agriculture,
beginning any time.
2. Agricultural
Extension,
all the time.



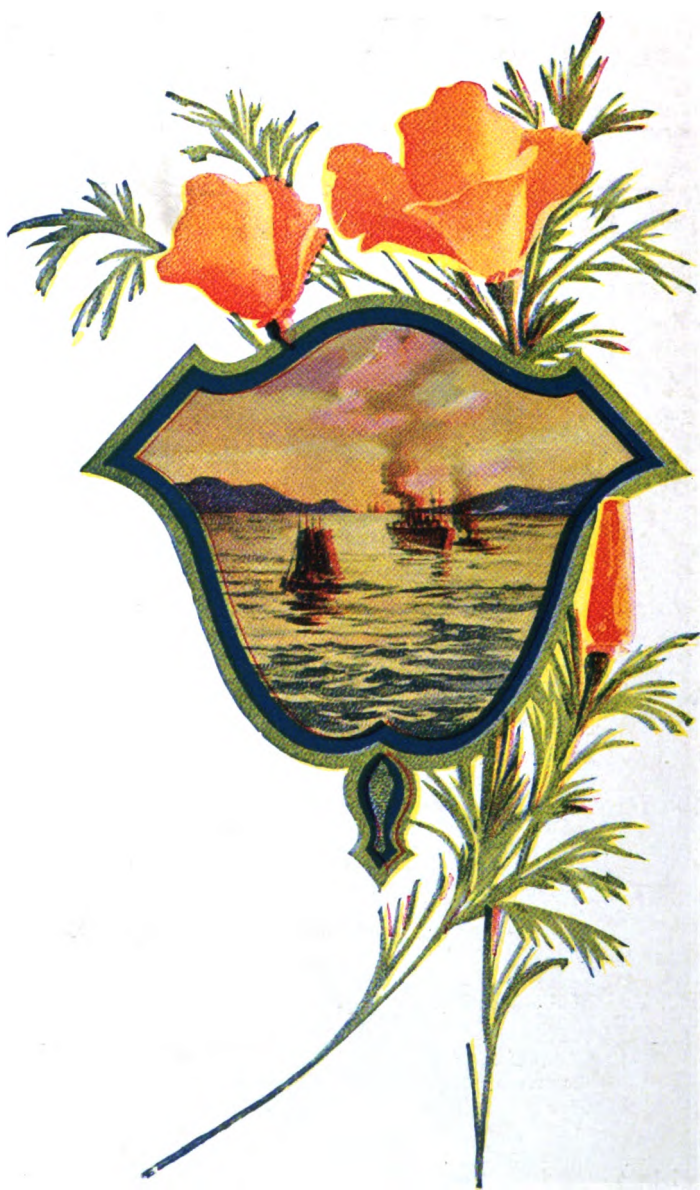
COUNTIES HAVING FARM ADVISERS

Humboldt	Alameda
Glenn	San Joaquin
Placer	Stanislaus
Yolo	Madera
Napa	Kern
Solano	Ventura
	San Diego

The work of the College of Agriculture is divided into two parts: Research and Instruction.

RESEARCH

It is its duty to investigate the processes of plant and animal life, to discover the methods of control of diseases and insect enemies, to study the most economical methods of producing and marketing farm products and to consider those rural institutions which will best promote both the wealth and welfare of the citizens of the State. More than two hundred experimental projects are under way. Over two hundred and fifty thousand bulletins and circulars, giving the results of these researches are distributed annually. They are sent to citizens of the State free upon request. Address Director of the Agricultural Experiment Station, University of California, Berkeley.

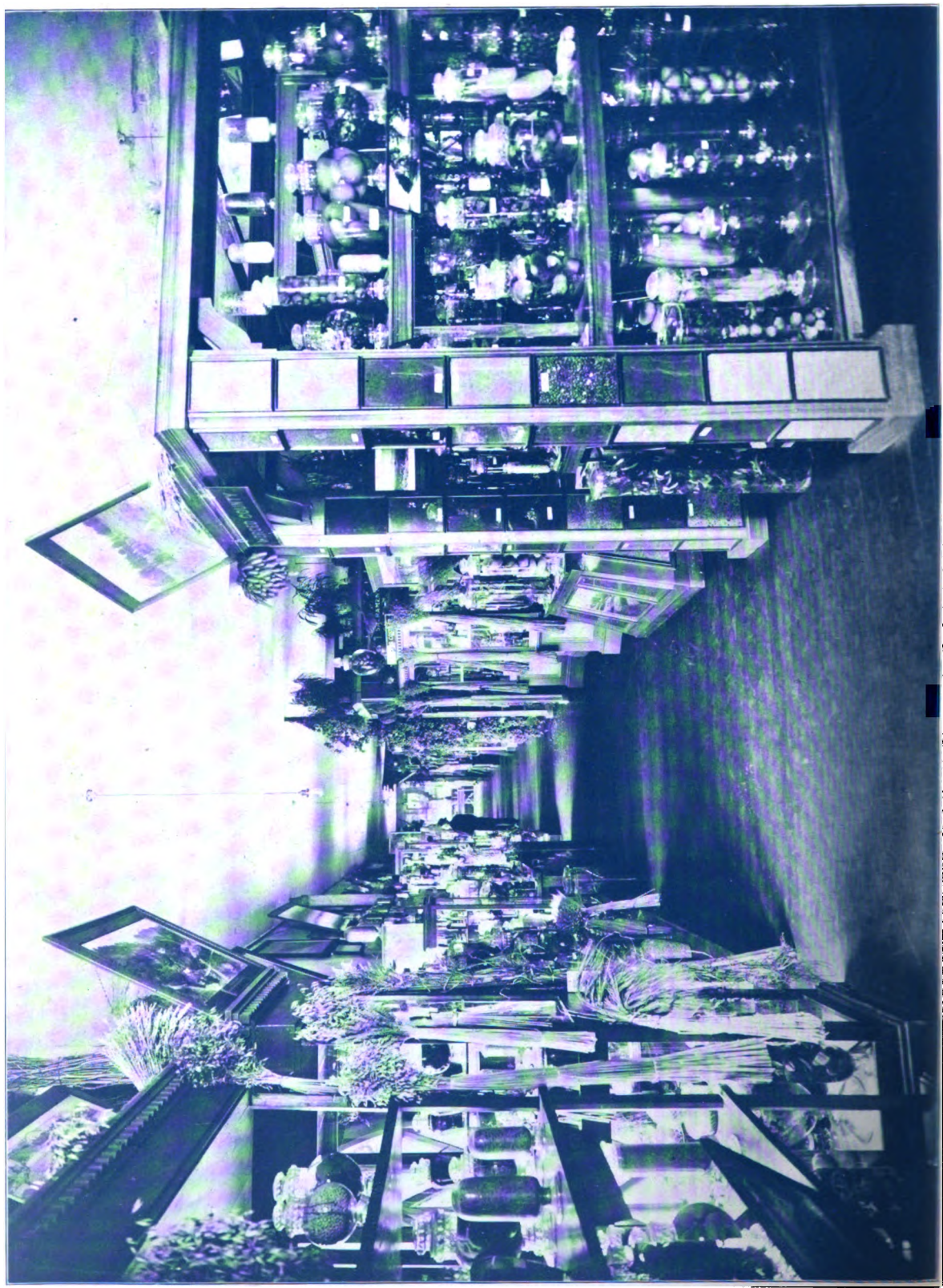


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California

RESOURCES AND POSSIBILITIES





ONE OF THE MAIN AISLES. EXHIBIT CALIFORNIA DEVELOPMENT BOARD.

CALIFORNIA

RESOURCES AND POSSIBILITIES

TWENTY-SEVENTH ANNUAL REPORT

OF THE

California Development Board

FOR THE YEAR 1916

Submitted as of May, 1917

CALIFORNIA DEVELOPMENT BOARD

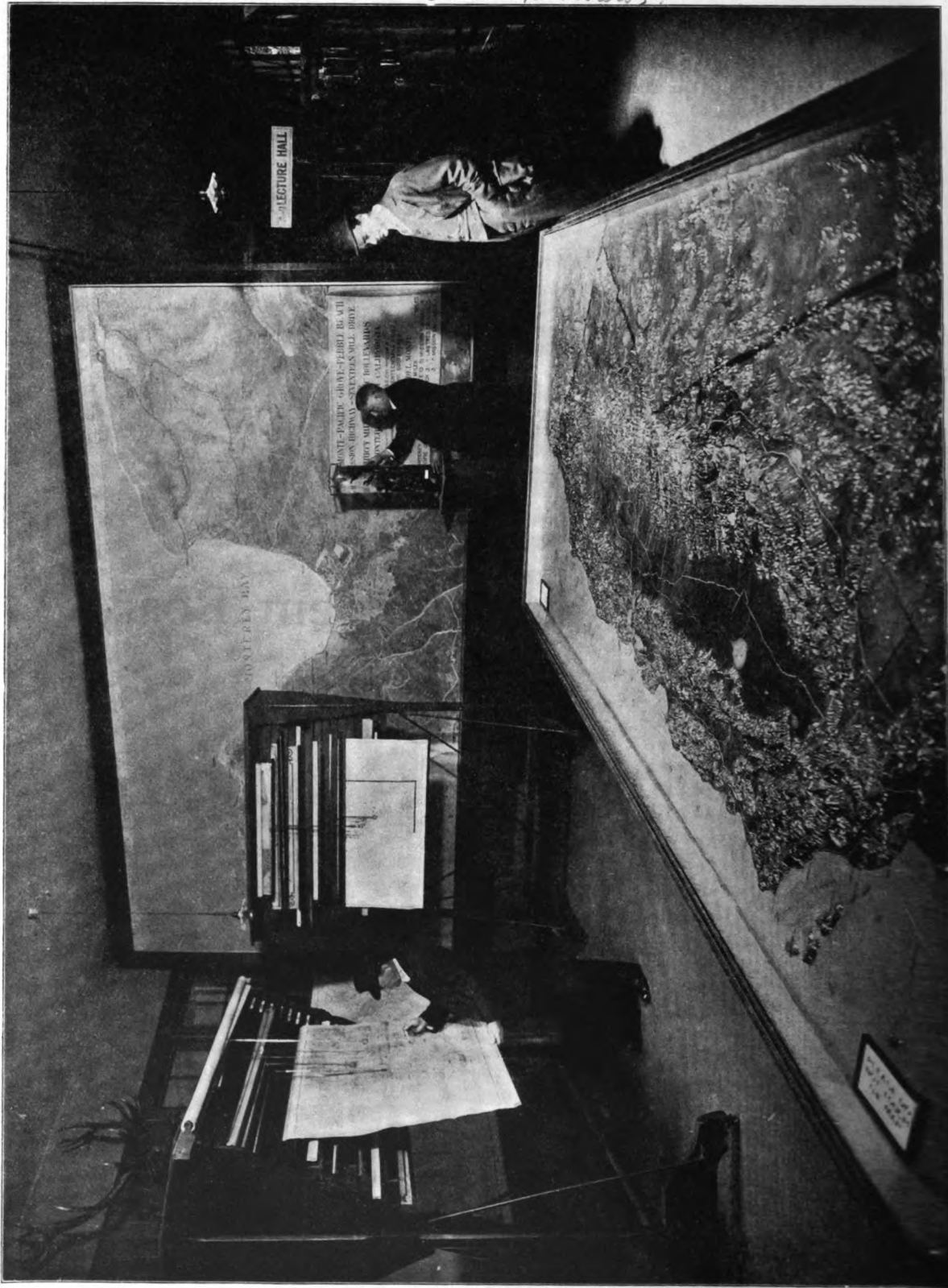
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The Boards





TWENTY-SEVENTH ANNUAL REPORT OF THE CALIFORNIA DEVELOPMENT BOARD

TO THE MEMBERS OF THE BOARD:

I have the honor to present herewith the twenty-seventh annual Statistical Report of the California Development Board. This report is the most complete up-to-date record of the progress and production of the State of California which is published, and is the result of painstaking work, following the closest contact with every section and interest in the State. It is as complete and accurate as is humanly reasonable to expect considering that every authoritative resource has been drawn upon. Since this report is published in a very large edition for distribution all over the world, the following statement as to the character and activities of the Board seems pertinent:

The California Development Board is directed by an Executive Committee composed of fifteen gentlemen active in the public and commercial life of California. Its membership is made up of official representatives appointed by the Boards of Supervisors of thirty-seven counties of the State, together with a representative from each active membership in the Board. Active members consist of persons and firms subscribing \$10 or more per month to our work. Helpful affiliation is sustained with all of the commercial organizations of the State and the Board cooperates closely with the Agricultural Department of the State University and with other official and public agencies. Correspondence from intending settlers and others received at the Governor's office, the State Department, the Commission of Immigration and Housing and other official bureaus is, as a rule, turned over to the Board for attention.

The Board furnishes speakers and experienced advice to commercial organizations desiring assistance in their work and seeks to raise the efficiency of all voluntary organizations for commercial and agricultural development. A formal meeting of representatives of all the counties of the State is held at least once each year, at which State-wide problems are discussed. This brief sketch of our work is presented for the information of homeseekers, investors and inquirers to whose hand this statistical report may come.

Correspondence is solicited from all who are interested in California or who desire to locate commercial, manufacturing or agricultural enterprises. All inquiries will be answered impartially and the fullest information obtainable will be gladly furnished.

The Board has nothing to sell and does not represent any real estate or commercial enterprise. Its sole object in answering inquiries is to give such information as will enable homeseekers and investors to secure a thorough knowledge of the conditions in the localities in which they are interested.

Some Board Activities of the Year

Our Information Bureau at the Ferry Building has been conducted with efficiency. The average attendance at the desk has been approximately 300 daily, 60% of whom registered from outside the State. About 50% of these merely asked for county literature but the greater part of the balance have required specific information and personal attention. From two to four members of the staff have been constantly on duty in this department throughout the year.

The usefulness of the library has been increased by the addition of valuable bulletins from the various State commissions, the University of California, the Chambers of Commerce and the U. S. Department of Agriculture, as well as by the segregation and classification of numerous clippings from the many farm magazines published throughout the State.

The map file has been replenished by the addition of fifteen newly revised county maps, and through the courtesy of the State Automobile Association, a large picture map of the Monterey peninsula has been hung in the exhibit rooms. Under the direction of an expert, the relief map was entirely revised and brought up-to-date by the addition of new railway lines, highways, towns and national parks and monuments.

The agricultural survey work has shown marked progress, representatives being in the field the greater part of the year. The United States soil surveys and topographical maps have also reinforced this accurate stock of information.

The approximate number of inquiry letters received and answered during the year was 15,000; in addition to this there were 3,500 special letters sent to members, 8,600 special letters sent to secretaries and 3,500 special letters sent to editors, beside 44,000 printed circular letters and notices sent to various sources. The postage bill for the year 1916 was \$1,475.00.

Thirty-four counties maintained exhibits in the Ferry Building and Imperial County is now preparing an exhibit which will be installed in the near future. The exhibits have been thoroughly overhauled from time to time, many additions having been made in the shape of new material, photographs, etc.

A floral exhibit has been started to which additions will be made during the year. A small exhibit of rare fruits from the Plant Introduction Station at Chico, including samples of jujube fruits from China and persimmons from Japan, has been prepared and forms the nucleus for a unique display which will be completed during the coming season.

The flature machine owned and operated under the direction of the Ladies' Silk Culture Society of California proved an attraction for seven months.

There were 1,150 stereopticon lectures delivered on California counties to approximately 22,000 persons. Inquiries were answered by lecturers to 1,550 persons, 450 homeseekers were directed to various sections of the State. 950 people were given information regarding maps, etc., 350 persons were directed to points of interest around the Bay, and 65 unskilled laborers were given letters to parties who might furnish them with employment. Early in the year a new moving picture machine was added to the lecture bureau and two exhibitions have been made daily. Films have all been of California educational subjects and have been furnished by the various counties with

one exception, that being the film loaned us by the Department of Interior in Washington showing Yosemite views.

These moving picture exhibits have been attended by approximately 15,000 persons. The quality of attendance at the lectures has been exceptionally good, consisting mostly of people outside of California who were visitors from the East and Middle West. In many instances they were husbands and wives with sums of money varying from \$3,000 to \$40,000.

Several special lectures have been given to schools and sets of slides have been furnished to persons engaged in lecture work outside of the State.

During the year 17,000 copies of the Annual Report were distributed. 240,000 Monthly Bulletins were sent out, 8,000 separate California maps and 3,000 copies of Oakland and San Francisco maps, 6,000 postal cards and 150,000 pieces of miscellaneous literature, including county booklets, leaflets, farm magazines, route books, mileage maps, etc.

Three meetings were held during the year at Fresno, Yreka and San Bernardino respectively. A splendid delegation from the membership attended these gatherings, and representatives of the Board have taken part in the activities of the various county agricultural societies by attending fairs, expositions, etc.

The Board became a participant for the first time in the grand Annual Tournament of Roses held on New Year's Day in Pasadena and obtained the sixth prize given for an entry in the Civic Division.

The finances of the Board are in good condition and there are no outstanding debts.

We wish to take this occasion to express our appreciation for the hearty cooperation of the Press throughout the State at all times.

The Annual Statistical Report covering the calendar year 1916 follows.

Respectfully submitted,

ROBERT NEWTON LYNCH.

ANNUAL STATISTICAL REPORT

Growth in Population and Development of California Since It Became a State

(U. S. Census Returns:)

Year	Population of State	Number of farms	Average acres per farm	Avge. value of land and buildings per acre
1850.....	92,597	878	4,465.6	0.99
1860.....	379,994	18,716	466.4	5.58
1870.....	560,247	23,724	481.7	12.36
1880.....	864,694	35,934	461.8	15.79
1890.....	1,208,130	52,894	405.	32.53
1900.....	1,485,052	72,542	397.4	24.56
1910.....	2,377,549	88,197	316.7	51.93

Irrigation

Of the 88,197 farms in the State, 39,352 (46.6 per cent) were irrigated in 1909. The area reported as irrigated in 1909 was 2,664,104 acres, or 23.4 per cent of the improved land in farms. The area to which enterprises existing in 1910 were capable of supplying water was 3,619,378 acres, and the total acreage included in irrigation projects (completed or under way) in 1910 was 5,490,360 acres.

Population, Number of Farms and Farm Acreage

Census year	Population	Farms		Land in farms		Per cent of land area in farms	Per cent of farm land improved
		Number	Per cent of increase	Acres	Improved land (acres)		
1910.....	2,377,549	88,197	21.6	27,931,444	11,389,894	28.0	40.8
1900.....	1,485,053	72,542	37.1	28,828,951	11,958,837	28.9	41.5
1890.....	1,213,398	52,894	47.2	21,427,293	12,222,839	21.5	57.0
1880.....	864,694	35,934	51.5	16,593,742	10,669,698	16.7	64.3
1870.....	560,247	23,724	26.8	11,427,105	6,218,133	11.5	54.4
1860.....	379,994	18,716	2,046.3	8,730,034	2,468,034	8.8	28.3
1850.....	92,597	878	.....	3,893,985	32,454	3.9	0.8

Farm Operations in 1910

Color and nativity	Total		Owners	Tenants	Man-agers	Per cent of total		
	Number	Per cent distribution				Owners	Tenants	Man-agers
Native white.....	58,926	66.8	45,780	10,505	2,641	77.7	17.8	4.5
Foreign-born white....	26,193	29.7	19,914	5,565	714	76.0	21.2	2.7
Negro and other non-white.....	3,078	3.5	938	2,078	62	30.5	67.5	2.0
Total.....	88,197	100.0	66,632	18,148	3,417	75.5	20.6	3.9

Density of Population

In 1900, twenty States ranked ahead of California in population. In 1910, only eleven had that honor. In the ten-year period the Golden State has outstripped nine of them, taking twelfth place.

The density of the population is still but 15.2 persons to the square mile.

Population of California Counties

The estimates for 1914 are all official estimates. The initials in the last column show the authority for each: C of C=Chamber of Commerce; B of S=Board of Supervisors; B of T=Board of Trade; Co. Cl=County Clerk. Repeated efforts to secure even an estimate from all of the counties have been unavailing, though many officials were appealed to in each county. The official figures for 1910 are used in the case of each delinquent county.

Population of California Counties

Counties	County Seat	Land area in Square Miles, 1910	Population 1910 U. S. Census	Per Cent of Increase 1900-10	Population Dec. 31, 1914 (Estimated)	Author- ity
Alameda.....	Oakland.....	732	246,131	89.0	359,000	C of C
Alpine.....	Markleeville....	776	309	-39.3	309	1910
Amador.....	Jackson City....	601	9,086	-18.3	11,000	Co Cl
Butte.....	Oroville.....	1,722	27,301	59.5	31,000	C of C
Calaveras.....	San Andreas....	1,027	9,171	-18.1	9,171	1910
Colusa.....	Colusa.....	1,140	7,732	5.0	7,882	C of C
Contra Costa...	Martinez.....	714	31,674	75.5	52,500	C of C
Del Norte.....	Crescent City...	1,024	2,417	0.4	2,417	1910
El Dorado.....	Placerville.....	1,753	7,492	-16.6	8,000	Co Cl
Fresno.....	Fresno.....	5,950	75,657	99.8	120,000	B of S
Glenn.....	Willows.....	1,259	7,172	39.3	7,172	1910
Humboldt.....	Eureka.....	3,634	33,857	24.9	37,500	C of C
Imperial.....	El Centro.....	4,089	13,591	....	50,000	C of C
Inyo.....	Independence...	10,019	6,974	59.3	7,500	B of S
Kern.....	Bakersfield....	8,003	37,715	128.9	50,000	B of S
Kings.....	Hanford.....	1,159	16,230	64.4	23,500	C of C
Lake.....	Lakeport.....	1,278	5,526	-8.2	5,600	C of C
Lassen.....	Susanville.....	4,531	4,802	6.5	7,000	Co Cl
Los Angeles....	Los Angeles....	4,067	504,131	196.0	815,000	C of C
Madera.....	Madera.....	2,112	8,368	31.5	12,000	C of C
Marin.....	San Rafael.....	529	25,114	59.9	28,400	C of C
Mariposa.....	Mariposa.....	1,463	3,956	-16.2	3,956	1910
Mendocino.....	Ukiah.....	3,453	23,929	16.9	27,000	C of C
Merced.....	Merced.....	1,995	15,148	64.4	20,000	C of C
Modoc.....	Alturas.....	3,823	6,191	22.0	6,191	1910
Mono.....	Bridgeport.....	3,030	2,042	5.8	2,100	Co Cl
Monterey.....	Salinas.....	3,330	24,146	24.6	25,250	C of C
Napa.....	Napa.....	783	19,800	20.4	26,500	C of C
Nevada.....	Nevada City....	974	14,955	-15.9	15,500	C of C
Orange.....	Santa Ana.....	795	34,436	74.8	56,500	C of C
Placer.....	Auburn.....	1,395	18,237	15.5	18,237	1910
Plumas.....	Quincy.....	2,594	5,259	12.9	5,259	1910
Riverside.....	Riverside.....	7,240	34,696	93.9	45,000	Co Cl
Sacramento.....	Sacramento.....	983	67,806	47.7	67,806	1910
San Benito.....	Hollister.....	1,392	8,041	21.2	8,750	Co Cl
San Bernardino.	San Bernardino.	20,157	56,706	103.0	53,000	B of S
San Diego.....	San Diego.....	4,221	61,665	75.7	125,379	Co Cl
San Francisco...	San Francisco...	43	416,912	21.6	528,705	C of C
San Joaquin...	Stockton.....	1,448	50,731	43.1	70,000	C of C
San Luis Obispo.	San Luis Obispo.	3,334	19,383	16.5	25,000	C of C
San Mateo.....	Redwood City..	447	26,585	119.8	35,000	C of C
Santa Barbara..	Santa Barbara..	2,740	27,738	46.5	32,750	C of C
Santa Clara.....	San Jose.....	1,328	83,539	38.7	90,000	B of S
Santa Cruz.....	Santa Cruz.....	435	26,140	21.5	30,140	C of C
Shasta.....	Redding.....	3,858	18,920	9.3	19,000	Co Cl
Sierra.....	Downieville....	923	4,098	2.0	4,098	1910
Siskiyou.....	Yreka.....	6,256	18,800	10.8	25,000	Co Cl
Solano.....	Fairfield.....	822	27,559	14.1	31,000	C of C
Sonoma.....	Santa Rosa.....	1,577	48,394	25.8	48,394	1910
Stanislaus.....	Modesto.....	1,450	22,522	135.8	30,000	B of T
Sutter.....	Yuba City.....	608	6,328	7.5	9,375	Co Cl
Tehama.....	Red Bluff.....	2,893	11,401	3.7	14,575	Co Cl
Trinity.....	Weaverville....	3,166	3,301	-24.7	3,250	Co Cl
Tulare.....	Visalia.....	4,856	35,440	92.9	34,500	C of C
Tuolumne.....	Sonora.....	2,190	9,979	-10.6	9,979	1910
Ventura.....	Ventura.....	1,878	18,347	27.7	21,000	C of C
Yolo.....	Woodland.....	1,014	13,926	2.3	15,000	Co Cl
Yuba.....	Marysville.....	639	10,042	16.5	14,750	Co Cl
California..	.....	155,652	2,377,549	60.1	3,242,895	

Since the estimate of the State Statistician for July 1, 1914, is only 2,757,895, it is probable that some of these 1914 estimates are mere guesses, on the optimistic side.

Principal Cities of California

This table gives the population of cities in California having a population of approximately 2,000 in 1910 and showing the rapid growth in the succeeding five years as estimated by the State Board of Control, June 30, 1915.

Cities	Pop. Per 1910 Census	Estimated Pop. June 30, 1915
Alameda.....	23,383	30,000
Bakersfield.....	12,727	19,220
Berkeley.....	40,434	60,000
Chico.....	3,750	6,200
Daly City.....	.....	5,000
El Centro.....	1,610	6,000
Eureka.....	11,845	15,000
Fresno.....	24,892	45,000
Glendale.....	2,746	7,556
Grass Valley.....	4,520	5,100
Hanford.....	4,829	6,250
Long Beach.....	17,809	32,252
Los Angeles.....	319,198	550,000
Marysville.....	5,430	6,000
Modesto.....	4,034	7,200
Monrovia.....	3,576	5,500
Monterey.....	4,923	5,000
Napa.....	5,791	6,500
Oakland.....	150,174	185,000
Palo Alto.....	4,486	6,000
Pasadena.....	30,291	39,000
Petaluma.....	5,880	7,500
Pomona.....	10,207	14,500
Red Bluff.....	3,530	5,072
Redlands.....	10,449	11,500
Richmond.....	6,802	16,000
Riverside.....	15,212	19,000
Sacramento.....	44,696	75,000
Salinas.....	3,736	5,000
San Bernardino.....	12,779	18,000
San Diego.....	39,578	90,000
San Francisco.....	416,912	530,000
San Jose.....	28,946	34,000
San Luis Obispo.....	5,157	6,500
San Mateo.....	4,384	6,000
San Rafael.....	5,934	6,000
Santa Ana.....	8,429	14,500
Santa Barbara.....	11,659	15,000
Santa Clara.....	4,348	6,000
Santa Cruz.....	11,146	13,600
Santa Monica.....	7,847	12,000
Santa Rosa.....	7,817	11,000
South Pasadena.....	4,649	7,500
Stockton.....	23,253	42,000
Vallejo.....	11,340	15,000
Venice.....	3,219	8,500
Visalia.....	4,550	6,000
Watsonville.....	4,446	6,000
Whittier.....	4,550	7,536
Woodland.....	3,187	5,000

Summary of the State

	Population		Increase	Square miles	Population per square mile	
	1910	1900	Per Cent		1910	10 yr. inc.
Bay counties.....	925,708	658,156	40.6	7,108	130.2	37.6
South of Tehachapi.....	751,310	304,209	146.9	45,102	16.6	9.9
Sacramento Valley.....	153,708	114,656	34.6	10,280	14.9	3.8
San Joaquin Valley.....	261,811	143,179	80.2	27,176	9.7	4.4
Rest of State.....	285,012	264,853	7.6	66,506	4.2	.4
	2,377,549	1,458,053	60.1	156,172	15.2	5.7

This segregation shows that the greatest gain per square mile has been in the counties about San Francisco Bay, while the greatest aggregate gain and the greatest rate of increase has been south of the Tehachapi.

Of the two great interior valleys, the San Joaquin Valley has made the greatest aggregate gain, 118,632, and the greatest gain per cent, 80.2; while the Sacramento Valley made an aggregate gain of 39,042, and a gain per cent of 34.6.

The remaining counties of the State, twenty-five in number, show an aggregate gain of 20,159, and a net gain of 7.6 per cent.

Urban and City Population

Class of places	Population		Increase 1900 to 1910	
	1910	1900	Number	Per cent
The State.....	2,377,549	1,485,053	892,496	60.1
Urban territory.....	1,469,739	810,193	659,546	81.4
Cities and towns of—				
100,000 inhabitants or more.....	886,284	514,008	372,276	72.4
25,000 to 100,000 inhabitants.....	183,945	90,813	93,132	102.6
2,500 to 25,000 inhabitants.....	399,510	205,372	194,138	94.5
Remainder of the State.....	907,810	675,860	232,950	34.5

THE GAIN ON THE PACIFIC SLOPE

While the gain in population for the whole of the Continental United States, as shown by the Census of 1910, was 15,977,691, an increase of 21 per cent, the eleven States of the Pacific Slope, as given in the table below, show an aggregate increase of 2,734,567, an increase of 66.8 per cent.

The combined area is 1,175,742 square miles, which makes an average population per square mile of 5.8 persons, while the average population per square mile for the Continental United States is 30.9 persons.

Pacific Slope States

	Population		Increase Per cent	Square miles	Population per square mile	
	1910	1900			1910	10 yr. inc.
Montana.....	376,053	243,329	54.5	145,310	2.6	.9
Wyoming.....	145,965	92,531	56.8	97,575	1.5	.6
Colorado.....	799,024	539,700	48	103,645	7.5	2.3
New Mexico.....	327,396	195,300	67.6	122,460	2.7	1.1
Arizona.....	204,354	122,931	66.2	112,920	1.8	.7
Utah.....	373,351	276,749	34.9	82,190	4.5	1.1
Nevada.....	81,875	42,335	93.4	109,740	.8	.4
Idaho.....	325,594	161,772	101.3	84,290	3.9	2.
Washington.....	1,141,990	518,103	120.4	66,880	17.	9.3
Oregon.....	672,765	413,536	62.7	94,560	7.1	2.7
California.....	2,377,549	1,485,053	60.1	156,172	15.2	2.7
Total.....	6,825,916	4,091,349	66.8	1,175,742	5.8	2.4

FINANCIAL CONDITIONS IN CALIFORNIA

San Francisco is the financial center of the Pacific Coast. On June 30, 1916, the latest date for which complete figures are available, the principal items of the resources and liabilities of the banks of San Francisco and of California were as follows:

Capital, Surplus and Undivided Profits

	San Francisco	California
National banks.....	\$51,664,776.52	\$104,444,000.00
State commercial and trust.....	15,997,396.86	55,173,649.53
Total commercial.....	\$67,662,173.38	\$159,617,649.53
Savings banks.....	15,985,733.52	48,971,938.67
Totals.....	\$83,647,906.90	\$208,589,588.20

Individual Deposits

	San Francisco	California
National banks.....	\$145,613,720.34	\$318,321,000.00
State commercial and trust.....	52,944,817.47	150,395,944.43
Total commercial.....	\$198,558,537.81	\$468,716,944.43
Savings banks.....	232,440,284.64	528,910,247.23
Totals.....	\$430,998,822.45	\$997,627,191.66

Loans and Discounts, Including Overdrafts

	San Francisco	California
National banks.....	\$160,940,156.04	\$339,948,000.00
State commercial and trust.....	34,667,169.34	116,157,362.87
Total commercial.....	\$195,607,325.38	\$456,105,362.87
Savings banks.....	148,260,369.54	378,711,181.72
Totals.....	\$343,867,694.92	\$834,816,544.59

Resources

	San Francisco	California
National banks.....	\$321,431,149.35	\$678,838,000.00
State commercial and trust.....	82,294,082.73	230,203,414.07
Total commercial.....	\$403,725,232.08	\$909,041,414.07
Savings banks.....	250,828,408.67	587,540,833.63
Totals.....	\$654,553,640.75	\$1,496,582,247.70

The Banks of California

The dominating financial note of the fiscal year was an unexampled expansion in the industrial activity of the State. There was an unparalleled increase in the cash resources of the banks under State jurisdiction and a distribution of credits by them into avenues of productive energy almost five times as great in volume as during the preceding year. The State has enjoyed a year of steady progress, and while some of its industries profited from uncommon demands arising in the European war, the extreme inflation created by that cause has not reached California. Industries have been more productive than ever before in the history of the State and the outlook financially, industrially and commercially is distinctly favorable.

In every phase of banking energy the facts of the fiscal year offer a startling comparison with those of any other in the financial life of the State. Compared with the fiscal year 1914-1915 the contrast is little less than astounding. At the close of business on June 30, 1916, the aggregate of assets in State banks was \$817,744,349.70, an increase over the preceding year of \$88,985,381.76. This represents an increase more than six times greater than that of the preceding year when the increase was \$14,424,-

631.05. At the close of business on June 30, 1916, there were in State banks individual deposits aggregating \$679,306,191.66, an extraordinary increase over the preceding year of \$97,896,167.87. As compared with the fiscal year 1914-1915 the increase in individual deposits in the fiscal year 1915-1916 is more than sixteen times greater than the accomplishment of 1914-1915 when the increase was \$5,852,511.69.

Of the increases in the latest fiscal year \$70,201,819.54 are in the savings banks, making in these banks an aggregate of \$528,910,247.23.

As compared with the preceding fiscal year the increase in savings deposits was more than seven times greater, the increase in savings deposits during the fiscal year 1914-1915 having been \$9,466,788.12.

It is of interest to note that all banks in the State, national as well as State, have reported to the State Controller and to this department an aggregate of \$129,658.60 in unclaimed deposits. This sum represents all deposits unclaimed for more than twenty years. These moneys will escheat to the State and shall be deposited with the State Treasurer to be invested, accounted for and paid out as is provided in the case of other escheated property. It is the first time in the history of California that banks have been subjected to such a condition.

RESOURCES

	June 30, 1916	June 23, 1915	Increase	Decrease
Loans and discounts.....	\$494,567,278.84	\$470,585,712.46	\$23,981,566.38	
Overdrafts.....	301,265.75	394,261.96		\$92,996.21
Bonds, warrants and other securities.....	146,824,026.61	122,899,359.63	23,924,666.98	
Bank premises, furniture and vaults.....	27,155,697.37	27,195,699.58		40,002.21
Other real estate owned.....	6,364,396.44	5,700,233.92	664,162.52	
Due from banks.....	96,141,557.37	68,157,553.82	27,984,003.55	
Cash on hand.....	34,924,199.64	27,568,582.04	7,355,617.60	
Exchanges for clearing house.....	5,421,016.51	1,769,647.35	3,651,369.16	
Checks and other cash items.....	1,943,449.66	671,507.34	1,271,942.32	
Advances to court trusts.....	58,369.22		58,369.22	
Other resources.....	4,043,092.29	3,816,409.84	226,682.45	
Totals.....	\$817,744,349.70	\$728,758,967.94	\$89,118,380.18	\$132,998.42

LIABILITIES

	June 30, 1916	June 23, 1915	Increase	Decrease
Capital stock paid in.....	\$63,711,026.66	\$62,452,186.66	\$1,258,840.00	
Surplus.....	29,817,183.13	28,568,208.49	1,248,974.64	
Undivided profits.....	10,617,387.41	17,003,869.56		\$6,386,482.15
Bills payable.....	847,229.62	3,785,697.07		2,938,467.45
Notes rediscounted.....	47,500.00	94,699.45		47,199.45
Deposits due to banks.....	12,639,682.52	12,272,091.70	367,590.82	
Individual deposits.....	679,306,191.66	581,410,023.79	97,896,167.87	
Deposits of money received from executors, etc.....	368,750.42	123,871.86	244,878.56	
State, county and municipal deposits.....	15,706,984.60	17,425,177.80		1,718,193.20
Postal savings deposits.....	1,032,049.80	1,218,192.14		186,142.34
Other liabilities.....	3,650,363.88	4,404,949.42		754,585.54
Totals.....	\$817,744,349.70	\$728,758,967.94	\$101,016,451.89	\$12,031,070.13

Clearing House Exhibits

The bank clearings of San Francisco have more than doubled since 1900. Los Angeles, the other large financial center of the State, while showing a smaller aggregate, has a larger proportionate increase.

The San Francisco Clearing House was organized March, 1876. The clearings for the 9 $\frac{3}{4}$ months of that year were \$476,123,237.97. In 1890 they were \$851,066,172.60. In 1900 they were \$1,029,582,574.78. In 1916 they were \$3,479,862,482.31.

In the 40 years 9 $\frac{3}{4}$ months of its existence the total amount of clearings has been \$51,777,672,210.65. The average daily clearings increased from \$1,927,624 in 1876 to \$3,895,554.66 in 1912, and \$11,599,541.61 in 1916.

The gain in volume of clearing house business strongly reflects the increase in the mineral and agricultural products and the increase in the amount of exports and imports, as well as the sales of real estate and the building operations of the city.

Other cities of California show an increase that indicates the marvelous development of the State now going on.

The record of clearings in the two principal cities in the past thirteen years is as follows:

San Francisco		Los Angeles	
Year	Clearings	Year	Clearings
1902	\$1,373,362,025.31	1902	\$245,516,094.85
1903	1,520,200,682.07	1903	307,316,530.90
1904	1,534,631,136.73	1904	345,343,956.35
1905	1,834,549,788.51	1905	478,985,298.40
1906	1,998,400,779.06	1906	578,635,516.82
1907	2,133,882,625.80	1907	581,803,982.00
1908	1,757,151,850.08	1908	505,588,756.02
1909	1,979,872,570.06	1909	673,165,728.81
1910	2,323,772,870.99	1910	811,377,487.47
1911	2,427,075,543.46	1911	942,914,424.19
1912	2,677,561,952.27	1912	1,168,941,700.02
1913	2,624,428,824.74	1913	1,211,167,980.18
1914	2,516,004,817.00	1914	1,145,167,110.19
1915	2,693,688,925.00	1915	1,049,110,927.00
1916	3,479,862,482.00	1916	1,292,961,997.00

The total clearings for the United States for 1912 showed an increase as compared with 1911 of but 9 per cent; San Francisco had an increase of over 10 per cent and Los Angeles of over 23 per cent. In 1916 San Francisco held its rank of seventh on the list of clearings and Los Angeles fifteenth.

Bank Clearings for 1916

San Francisco	\$3,479,862,482.00
The San Francisco clearings for the year 1916 were \$39,804,840 greater than the combined clearings of the next seven largest Coast cities:	
Los Angeles	\$1,292,961,997
Seattle	790,217,950
Portland	649,775,141
Spokane	255,204,283
Oakland	223,044,092
Tacoma	116,810,914
San Diego	112,043,265
	\$3,440,057,642

Other Clearing House Cities

	1911	1912	1913	1914	1915	1916
Oakland	\$172,666,406.17	\$222,570,346.29	\$188,730,763.00	\$176,074,062.82	\$188,464,820.00	\$223,044,092.00
Sacramento	78,376,700.21	92,747,060.69	108,268,688.39	103,286,903.09	101,129,004.00	127,219,795.00
San Diego	82,724,333.47	131,894,087.00	134,145,293.00	103,102,297.90	99,636,940.00	112,043,265.00
Fresno	39,782,776.05	51,400,594.73	57,384,801.12	53,442,675.00	53,554,334.00	71,926,311.00
Stockton	40,356,582.58	45,064,374.68	45,925,831.09	47,257,207.00	50,241,377.00	71,802,911.00
San Jose	29,877,754.37	35,882,473.55	35,730,898.59	36,344,989.14	34,935,899.00	43,806,621.00
Pasadena	41,607,900.10	47,144,736.48	47,818,722.51	43,946,058.76	43,831,333.00	49,630,130.00
Bakersfield (organized in March, 1912)		21,500,000.00	23,656,106.08	23,561,216.96	20,130,949.00	28,342,893.00
Long Beach (organized May 18, 1914)				17,378,406.86	26,418,091.00	30,469,429.00
Santa Rosa				12,869,860.00	11,951,550.00	12,309,851.00

FEDERAL BUSINESS

COMMERCIAL MOVEMENTS BY SEA FOR 1916

The following figures were supplied by the Treasury Department, United States Customs Service of San Francisco and Los Angeles:

District of San Francisco:

Imports—Year ending December 31, 1916.....	\$117,128,253.00
Exports—Year ending December 31, 1916 (Domestic).....	123,832,543.00
Exports—Year ending December 31, 1916 (Foreign).....	3,965,988.00
Customs Receipts—Year ending December 31, 1916.....	4,725,295.39
Shipments to non-contiguous territory, year ending December 31, 1916—Hawaii, Samoa, Guam, Alaska.....	35,574,984.00

District of Los Angeles:

Imports—Year 1916.....	\$2,557,678.00
Exports—Year 1916.....	2,381,446.00

The Postal Receipts for 1916 in San Francisco amounted to \$3,630,638.29; and the Internal Revenue receipts totaled \$13,145,446.70.

From the report of T. W. H. Shanahan, Superintendent of the United States Mint at San Francisco, California, for the year ended December 31, 1916, we find that 4,213,510.773 fine ounces of gold valued at \$87,100,997.87, and 3,616,011.34 fine ounces of silver valued at \$4,998,806.04 were received during 1916. The total coinage at the San Francisco Mint amounted to 58,387,500 pieces and included, beside the usual United States coinage, a large amount of money for the Philippine Islands.

PROGRESS IN THE METROPOLIS

The tenth anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.

San Francisco has won the admiration and wonder of the world by the courage and energy of its rebuilding, and stands today, owing to the character and equipment of its new structures, more fit than ever to occupy its proper place among the up-to-date cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represented sixty-one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of its people has been justified and the whole State contributes and assists in the great prosperity which is assured for the future.

Reconstruction of San Francisco

The reconstruction of the city involved vast expenditures by the municipality for streets, sewers, fire system, school houses and other municipal buildings, all of which have been of the most substantial character.

The buildings destroyed in San Francisco by the fire of 1906 numbered 28,188 valued at \$105,000,000. The money expended by private parties for labor on the new buildings has amounted to some \$100,000,000, while the municipality has expended large sums on the same account.

Expended Since 1906 by the Municipality

New sewer system, nearly complete.....	\$6,150,000
High pressure fire system.....	5,750,000
Municipal street railways.....	5,500,000
Asphalt plant.....	60,000
Civic Center.....	8,800,000
Schools.....	7,500,000
Hospitals.....	3,000,000
Fire and police stations.....	510,000
Public Library lands.....	740,000
Hall of Justice and County Jail.....	1,350,000
Hetch Hetchy Water Supply—lands and preliminary work.....	4,000,000
Docks.....	11,000,000
Streets and pavements.....	16,000,000
New parks and public playgrounds.....	1,360,000
Traffic tunnels.....	4,600,000
Private buildings.....	400,000,000
Total.....	\$476,320,000

Building Contracts in San Francisco

	Private	P. P. I. E.	Municipal	State	Federal	Total
1916.....	\$16,156,187	.....	\$2,040,343	\$639,643	\$278,148	\$19,114,321
1915.....	15,735,313	\$418,746	1,288,991	1,060,934	122,213	18,626,199
1914.....	17,385,736	4,716,497	5,927,798	2,151,726	292,700	30,468,457
1913.....	21,517,468	6,075,901	4,054,696	(1,149,184)	.....	32,797,259

Previous to 1913 figures for private building operations only were used and are exclusive of all Municipal, State, Federal and Exposition buildings.

The contracts recorded are as follows:

1912.....	\$26,269,006	1906.....	\$39,254,467
1911.....	24,495,168	1905.....	20,111,861
1910.....	22,873,942	1904.....	16,916,118
1909.....	30,411,196	1903.....	14,984,514
1908.....	35,128,549	1902.....	14,289,938
1907.....	50,499,499		

The total building contracts entered into since the fire amounted to \$329,954,811, exclusive of the work done by the municipality, the State of California, the United States Government and the Panama-Pacific International Exposition Company prior to December 31, 1912. All buildings erected within two years after the fire cost from 25 to 30 per cent more than the original recorded contract price; since then they have cost from 10 to 15 per cent more than the original contract price. It is, therefore, conservatively estimated that the total expended for building operations carried on in San Francisco since the fire is not less than \$372,421,146, not including operations carried on by the State of California, the United States Government, the Panama-Pacific International Exposition, or the municipal government.

Exceptional hotel accommodations, together with the new Auditorium located in the Civic Center at a cost of \$1,000,000, insures San Francisco's future as a great convention city. The Auditorium has a seating capacity of 12,000.

San Francisco bears the same relation to the Pacific Coast that New York does to the nation; for the year 1916 San Francisco ranked:

- 1st in actual value of land and improvements per capita.
- 3d in average capital per national bank.
- 7th in building contracts.
- 3d in foreign imports.
- 5th in total national banking capital.
- 8th in foreign exports of domestic goods.
- 7th in bank clearings.
- 11th in number of manufacturing establishments.

Over one-half the population are savings bank depositors.

The total amount expended in the rebuilding of San Francisco is equal to the cost of the Panama Canal.

San Francisco has a lower percentage of bonded debt to the assessed valuation than any larger city in the United States.

Of the eleven principal cities of the United States, San Francisco has the lowest percentage of mortgaged indebtedness on real estate and the highest actual valuation of land and improvements per capita.

BUILDING ACTIVITIES THROUGHOUT THE STATE

The building operations of most of the leading cities of the State show an increase in 1916, as will be seen by the following table:

Valuation			Valuation		
Los Angeles.....	1910.....	\$21,684,100	Sacramento.....	1910.....	\$2,164,456
	1911.....	23,004,185		1911.....	3,087,392
	1912.....	31,367,995		1912.....	2,793,544
	1913.....	31,641,921		1913.....	3,416,057
	1914.....	18,361,925		1914.....	2,329,978
	1915.....	11,888,662		1915.....	1,395,578
	1916.....	15,036,045		1916.....	2,102,158
Oakland.....	1910.....	6,695,789	Pasadena.....	1910.....	2,133,528
	1911.....	6,202,685		1911.....	2,183,713
	1912.....	9,009,734		1912.....	2,166,352
	1913.....	9,106,191		1913.....	2,787,507
	1914.....	5,217,520		1914.....	2,133,781
	1915.....	5,045,289		1915.....	1,494,349
	1916.....	5,368,290		1916.....	1,624,647
San Diego.....	1910.....	4,005,200	San Jose.....	1910.....	1,750,000
	1911.....	5,703,685		1911.....	569,369
	1912.....	10,001,004		1912.....	857,166
	1913.....	7,035,797		1913.....	485,006
	1914.....	3,143,321		1914.....	590,280
	1915.....	1,275,982		1915.....	555,910
	1916.....	1,869,994		1916.....	865,741
Stockton.....	1910.....	506,494	Fresno.....	1910.....	990,040
	1911.....	938,857		1911.....	1,075,941
	1912.....	1,129,170		1912.....	1,697,294
	1913.....	946,273		1913.....	1,776,666
	1914.....	1,117,787		1914.....	1,122,506
	1915.....	1,019,452		1915.....	1,051,666
	1916.....	1,138,174		1916.....	884,100
Bakersfield.....	1913.....	760,744	Santa Rosa.....	1914.....	175,457
	1914.....	283,970		1915.....	157,268
	1915.....	164,916		1916.....	100,294
	1916.....	331,663			
			Long Beach.....	1914.....	283,870
				1915.....	1,383,055
				1916.....	1,065,205

San Francisco Harbor

San Francisco has the largest land-locked harbor in the world.

In area the Bay of San Francisco covers 420 square miles and has a shore line, exclusive of navigable inlets, of 100 miles. The City and County (Consolidated) of San Francisco has a water frontage on the bay of 10 miles. The pierhead line is 800 feet from the bulkhead line and is fixed by the United States Government. On July 1, 1916, there was a total completed sea wall 16,000 feet in length, 36 completed piers and five planned, from 550 to 800 feet in length and from 138 to 200 feet in width. The total berth space of all piers and bulkhead wharves is 12.7 miles. The dock area of all piers is 4,144,245 square feet.

The San Francisco harbor front is owned by the State of California. The new docks and wharves are being built under a \$10,000,000 State bond issue, the interest on same and all sinking and redemption funds being paid for out of the harbor revenues. The Embarcadero, the street fronting the harbor, is also owned by the State, which operates a Belt Line Railroad over its entire length. On January 1, 1916, the Belt Line was 20,600 feet long. Freight can be unloaded directly on the freight cars on the Belt Line from the freighter alongside the dock (the Belt Line being connected with the main lines of all the transcontinental railroads and the spur tracks serving San Francisco's industrial area), so that freight can be transferred direct from steamer to warehouse or factory.

Deep water is found at all the docks and wharves on the San Francisco water front. Typhoons and hurricanes are unknown and the greatest Pacific liners dock without difficulty in any weather and at all stages of the tide. Ten fathoms is the average depth in the bay, so that safe anchorages are obtainable at all times. A depth of six and seven fathoms is reached at the end of all the piers. The only transport docks owned by the United States are at San Francisco.

The Federal Government has made an arrangement with the Hunters' Point Dry Dock Company (on the San Francisco side) to construct a drydock 1,050 feet long, the contract for which has been let and work is now under way. This will be the largest dry dock on the Pacific Coast. The United States will have first call on this dock at all times for the docking and repairing of government vessels. Two docks are now operated at Hunters' Point, one of them being 750 feet long.

All of the passenger and freight steamers sailing from San Francisco leave from the San Francisco side of the bay, with the exception of some small lumber schooners. Direct steamer connections may be made from here to all points along the Pacific Coast of North and South America, Siberia, Japan, China, the Philippines, the Orient, Hawaii, New Zealand, Australia, Alaska, as well as services through the Canal to Atlantic Coast points and Europe.

Oakland Harbor

The work on the Oakland water front has included the deepening of a channel along the Inner Harbor by the Federal Government, upon which the sum of \$4,337,068.35 has been expended. In addition, the city of Oakland has spent \$2,503,000. The last appropriation by the Federal Government amounted to \$98,000. This has made available along the Inner Harbor 48,120 feet of berthing space, which at the present time is 35% occupied.

Work on dredging slips, building wharves, and providing deep-water approaches to these wharves has been done and is being done by the Santa Fe and Southern Pacific Railways, and the Santa Fe has just completed a new \$1,500,000 freight terminal at the foot of Alice Street in Oakland, on the Inner Harbor. They have at that point more than 30 acres of water front property close to the heart of the city.

The city of Oakland has just completed a quay wall 2,000 feet long, extending from the foot of Clay Street to Myrtle Street, where approximately \$800,000 has been spent. The wall is 22 feet thick at the base and 8 feet at the top. It has 27 feet of water in front of it at low tide. Railroad tracks and modern fireproof warehouses have been constructed on it, while modern water and oil systems supply the ocean vessels. Coal bunkers are located at the west end of the wall and a high-pressure salt water system for fire protection runs along First Street 300 feet distant. This means an ideal water terminal in the center of the wholesale and manufacturing district, and within walking distance of the center of the city.

There are three large shipbuilding plants along the Inner Harbor, and many smaller ones.

On the western water front, in what is known as the Key Route Basin, the city of Oakland has paved the way for the development of a great terminal. It owns 294 acres of tide lands, and has expended more than \$500,000 in getting them ready for use. This project immediately adjoins the Southern Pacific Oakland Pier project, where that railroad is constructing a great water terminal.

Lieutenant-Colonel Thomas H. Rees, of the United States Army Engineers, has prepared plans for a continuous deep-water channel along the east bay shore from Oakland Pier to Point Richmond, which has the endorsement of the organizations in the cities interested, and which will be of great importance in the future development of the many miles of water front centering at Oakland.

Richmond Harbor

To Richmond belongs the honor of having practically completed one of the largest pieces of harbor development work ever undertaken by a city of its size and age. This city began its career in 1901, incorporated in 1907, and now has a population of 22,000.

The project consists of an Inner Harbor with a channel to deep water, a projecting arm and tunnel and a roadway through the rim of hills skirting the natural deep water frontage of the city connecting with a wharf 740 feet long at the outer end of the harbor channel and providing immediate use of this much of the new project while the rest is under construction.

Work on the tunnel and highway to the entrance channel of the new harbor as well as the big initial wharf has been completed at a cost of about \$600,000 and represents the highest class of construction in this line. The tunnel is concrete, the highway is paved with asphalt and the wharf is constructed with concrete piling and every modern freight handling device has been installed.

The United States Army Board of Engineers for Rivers and Harbors at Washington have approved and accepted the plans, with accompanying recommendations to the Secretary of War for \$428,000 as a preliminary appropriation. The Secretary of War has made similar recommendation to Congress and that body, through its committee, included \$100,000 in the Rivers and Harbors Bill to start the project.

Dredging has been done on the inner part of the new harbor. The expenditure for this work will be met by an equal amount on the part of the Government. More money will be asked from the Federal treasury as the city proceeds with construction and more bonds will be voted by the city.

The total cost of the new harbor, which, including the main channel, extends from a point beyond the Santa Fe wharves, to Point Isabel, in the vicinity of Stege Station, will be approximately \$4,000,000. The depth of the main harbor will range from twenty-four to thirty feet. The work of three large dredgers which are throwing up bulkheads for the channel and basin serves the dual purpose of giving depth to the harbor and of filling in the acreage behind the bulkheads, thus forming new land which will be leased by the city at a nominal figure for shipping, manufacturing and other enterprises.

A Federal appropriation of \$428,000 for the Richmond Harbor, with \$100,000 immediately available was embraced in the Rivers and Harbors Appropriation bill passed by the House of Representatives this year, contingent on a like amount being spent by the city. There has been spent by the City of Richmond to date \$678,000, and there remains a balance of the bond issue of \$1,170,000 voted by the people.

This inner harbor is really an auxiliary harbor, as the city possesses a natural deep water frontage at its western limits owned by corporations which have established great wharves and plants upon it; notable among these are the Standard Oil Company, and the California Wine Association which operates the largest winery in the world, at Winehaven. The Richmond Belt Railroad Company has wharves with forty feet of water where the biggest freighters afloat can dock, which are available for big enterprises.

Los Angeles Harbor

The Port of Los Angeles (San Pedro) is a broad harbor, protected by a great breakwater more than two miles long, which was built by the U. S. Government at a cost of \$3,000,000. This is the Outer Harbor. Extending half a mile into this protected harbor are solid earth-filled piers with wharves, some of which are the best that engineering skill could devise. There are now more than one and one-half miles of these wharves built in the Outer Harbor, with from thirty to thirty-five feet of water in front of them.

The channel leading from the Outer Harbor to the Inner Harbor is 400 to 900 feet wide, with a depth of 30 feet at low tide, extending two and one-half miles to a turning basis 1,600 feet in diameter. This channel is lined with wharves along most of its length. In the Inner Harbor are over 20,000 feet of channels 200 feet wide and 20 to 34 feet deep.

In the last six years Los Angeles has voted \$5,500,000 for harbor improvements and it stands pledged to spend a total of \$10,000,000 by 1919, the U. S. Government having expended about \$5,600,000 since 1871.

The net tonnage of vessels entering the harbor increased from 356,371 tons in 1902 to 3,223,023 tons for the fiscal year ending June 30, 1916. The total tonnage of all commodities, exclusive of lumber, for the fiscal year 1916 amounted to 2,051,785 tons, with a value of nearly \$80,000,000.

There are now completed over 13,000 feet of municipal wharves, with others under construction. There are completed over 3,800 feet of freight sheds, 100 feet wide, together with necessary rail terminals and paved street. There are also 7,000 feet of wharves operated by railroad companies, 7,960 feet operated by private wharf companies, and 7,000 feet by lumber companies.

San Diego Harbor

San Diego Bay, with an area of 22 square miles, is crescent shaped and completely land-locked. The entrance is protected by fortifications at Fort Rosecrans lying under the shadow of Point Loma. Depth of water over the bar at mean low tide is 39 feet and the main channel inside the bay is from 1,500 to 2,000 feet in width, and from 35 to 70 feet in depth at low water. By State legislative enactment, the City of San Diego controls its water front and tide lands, of which there are 1,460 acres. The City has expended \$1,400,000 in improvements which consist of a steel and concrete municipal pier 800 feet in length and 130 feet in width. A steel warehouse, a concrete administration building, and a bulkhead 2,675 feet long have been built, and 70 acres of tide lands reclaimed. The largest U. S. Signal Corps Aviation School on the Pacific Coast is located on North Island in this bay. San Diego Harbor is the first port of call in the United States north of the Panama Canal, and with the completion of the San Diego and Arizona Railroad this year, which will furnish direct transcontinental railroad communication with the East, is destined to become one of the most important harbors on the Pacific Coast.

Eureka Harbor

Humboldt Bay, a beautiful body of water at the very doors of the town, is fourteen miles long and from half a mile to four miles wide. It is traversed by twenty-one miles of lineal channel and is protected by two peninsulas of low sand dunes—one from the north and one from the south.

Being so completely land-locked, this harbor is of the utmost importance to a coast so barren of good harbors as is the Pacific; but its usefulness has in the past been seriously impaired by shifting sand bars which obstructed its entrance, and by the shallowness of some of its inner channels. In 1889 the general government began improving the entrance to the harbor by extending two jetties of rock, one on each side of the channel, so as to confine the waters to a permanent way. This work was completed in September, 1899, at a cost of more than two millions of dollars.

A survey made in 1903 showed the least depth of water in the channel to be in excess of 30 feet at low tide; by 1905 this had decreased to 27 feet; and in September 1907, a survey found the channel depth reduced to 22½ feet, and led the engineers to recommend the restoration of the jetties at an estimated cost of \$1,037,400. In 1910, Congress adopted this project, and appropriated \$150,000 for the first year's work. In 1911, \$170,000 was appropriated, and the project placed upon the continuing contract list, insuring its completion. The work was begun in 1912, and by July 30, 1915, the south jetty was fully reconstructed, and work was begun on the north jetty, August 1, 1915. The original estimated amount has been appropriated and used, and in 1914, \$200,000 additional was allotted and for 1915 \$300,000 was granted, and for 1916 \$300,000 for construction and \$75,000 for maintenance. Doubtless the total cost of this reconstruction will be over \$2,000,000. The depth of water in the channel is now over 26 feet at low tide.

An average of nearly 1,000 vessels arrive and depart from this harbor annually, and the value of their outgoing cargoes averages over \$10,000,000, while the incoming shipments are about 75% of that amount. The foreign export shipments are confined almost entirely to redwood lumber, the amount so shipped in 1916 being 28,223,000 feet, valued at \$688,389.

Monterey Bay

Monterey Bay might be considered as a gulf, on the south side of which is a harbor protected by a peninsula jutting out to the northwest. The entrance to the bay faces southwest, therefore, from the inner harbor of Monterey the ocean is not in view, and only land is seen.

Monterey harbor may be entered safely to secure anchorage in any kind of weather by the largest vessels, without a tug or pilot, as the entrance has no bar, nor are there any dangerous hidden reefs or rocks.

It is the natural outlet for the great San Joaquin Valley with its 11,000,000 acres of rich land. Several projects are now under way to connect this valley with Monterey by rail. According to the United States Engineers, the undertow, which causes ships to chafe against the piers is the only drawback. To remedy this, however, the State and National Governments have appropriated \$800,000, contingent upon the assurance that a railroad to the interior will be built within a reasonable time.

Santa Cruz Harbor

Santa Cruz, noted as a seaside resort, is not on the ocean coast, but nestles in behind Light-house Point, on the shore of Monterey Bay. In a semicircle behind the city lie the beautiful Santa Cruz Mountains. The bathing beach is nearly a mile long and slopes gradually from the famous beach buildings out into the bay. In years past a small coasting steamer touched occasionally at Fisherman's Wharf, which does not extend out far enough to make landings safe. The new Municipal Wharf, which has just been completed, reaches out into the bay over a half mile and already two lines of steamers are making regular trips from both north and south. Many tons of general merchandise are being handled over the new wharf as well as thousands of tons of cement, lime, canned goods and other products shipped from the place on special steamers.

San Luis Obispo Bay

San Luis Obispo Bay is nine miles south of the city of San Luis Obispo, 204 miles northwest of Los Angeles Harbor, and 249 miles southeast of San Francisco Harbor. The harbor is an open roadstead, protected on the west and southwest by Point San Luis and a breakwater about half a mile long.

There was originally a Whaler Reef, extending nearly half a mile southeasterly from Point San Luis, forming more or less of a natural breakwater, but during the winter season the harbor was exposed to the heavy swell caused by the southerly gales. The minimum of depth varied from 20 to 33 feet at mean low water in the protected area. The mean range of tide is 3.7 feet.

Port San Luis is one of the largest oil-shipping ports, if not the largest, on the Pacific Coast. A regular oil fleet consisting of about twenty vessels and barges carries oil from this Port to Alaskan and Chilean points. Large consignments are also shipped to Seattle, Vancouver, Honolulu and the Canal Zone.

Under the jurisdiction of the Producers Transportation Company the total pipe mileage terminating at Port San Luis is between 600 and 700 miles. The oil is brought from fields located at Coalinga, Kern, Midway, Sunset, McKittrick, Belridge, Lost Hills and Santa Maria.

Steamers of the Pacific Coast Steamship Company call twice a week from the north and south. There is said to be 38 feet of water at the wharf built by San Luis Obispo County, and 30 feet at the Port San Luis wharf.

According to 1915 statistics, 636 American and 15 foreign steamers, one sailing vessel, and 109 unrigged vessels cleared from this port carrying a tonnage of 1,051,681 valued at \$10,355,955.

A breakwater of sufficient length and height to enable deep draft vessels to lie at the wharf, has been built by the U. S. Government from Point San Luis to Whaler Island and for a distance of 1,820 feet southeasterly of Whaler Island, a total distance, including the island, of 2,401 feet, resulting in increased security to vessels in the anchorage and at the landing. The project was completed August 27, 1913, at a cost of \$568,418.08 for new work and \$19.75 for maintenance, a total of \$568,437.83. Since the completion of this work the commerce of the port has steadily grown.

CLIMATOLOGICAL DATA FOR 1916

(Table from Annual Summary, California Section, Weather Bureau Record, 1916, by George H. Willson, Forecaster.)

Stations	Counties	Eleva- tion feet	Temperature Degrees Fahrenheit			Precipitation inches		Rainy days	Sky			Type of Country
			Annual Mean	High- est	Low- est	Total for year	Total snow- fall		Clear days	Partly cloudy days	Cloudy days	
Independence.....	Inyo.....	3907	53.3	103	- 2	12.84	78	36	244	82	40	Mountain and high plateau
Yreka.....	Siakiyou.....	2625	45.8	99	-18	15.22	66	89	185	110	71	Mountain and high plateau
Alturas.....	Modoc.....	4400	48.1	95	-1	33.06	212	65	240	53	73	Mountain and high plateau
Sisson.....	Siakiyou.....	3555	49.1	96	-8	33.06	187	65	240	53	73	Mountain and high plateau
Quincy.....	Plumas.....	3400	51.3	96	-8	49.25	187	68	231	34	101	Mountain and high plateau
Summit.....	Plumas.....	7017	39.7	81	-5	51.70	530	88	239	27	100	Mountain and high plateau
Tanascok.....	Alpine.....	8000	35.8	81	-22	60.27	538	75	235	31	100	Mountain and high plateau
Leontie.....	Mariposa.....	3945	55.8	103	3	49.43	177	74	203	72	91	Mountain and high plateau
Redding.....	Shasta.....	552	61.0	110	24	38.42	22	73	220	88	58	Sacramento and San Joaquin valleys
Red Bluff.....	Gehama.....	307	61.3	113	27	20.09	11	71	218	69	79	Sacramento and San Joaquin valleys
Clarend.....	Glenn.....	284	62.3	113	26	16.27	12	63	225	67	74	Sacramento and San Joaquin valleys
Sacramento.....	Sacramento.....	71	59.5	105	30	18.27	4	69	246	68	52	Sacramento and San Joaquin valleys
Stockton (S. H.).....	San Joaquin.....	23	59.1	102	25	18.85	3	61	263	51	62	Sacramento and San Joaquin valleys
Merced.....	Merced.....	173	59.9	105	25	16.47	2	66	268	37	61	Sacramento and San Joaquin valleys
Fresno.....	Fresno.....	293	62.1	108	28	12.50	1	57	237	78	51	Sacramento and San Joaquin valleys
Bakersfield.....	Kern.....	404	62.9	110	24	7.96	0	39	268	22	76	Sacramento and San Joaquin valleys
Quenville (near).....	Butte.....	260	61.1	108	26	31.92	4	69	220	21	125	Foothills Sacramento and San Joaquin valleys
Nevada City.....	Nevada.....	1875	51.7	98	9	57.33	82	90	240	44	82	Foothills Sacramento and San Joaquin valleys
Placerville.....	El Dorado.....	249	60.0	108	22	20.66	2	47	259	13	94	Foothills Sacramento and San Joaquin valleys
Placer.....	Placer.....	600	61.4	109	28	45.27	34	66	223	48	95	Foothills Sacramento and San Joaquin valleys
Reedley.....	Fresno.....	347	60.2	109	26	16.99	0	36	265	41	60	Foothills Sacramento and San Joaquin valleys
Eureka.....	Humboldt.....	64	50.4	75	31	37.95	1	125	104	93	169	Sea coast
Point Reyes.....	Marin.....	490	51.4	80	35	20.18	1	85	135	87	144	Sea coast
San Francisco.....	San Francisco.....	207	55.9	87	37	28.09	1	82	197	77	92	Sea coast
Del Monte.....	Monterey.....	25	56.4	84	26	20.43	0	57	220	58	88	Sea coast
San Joaquin.....	San Joaquin.....	180	58.6	91	32	32.19	1	47	247	50	69	Sea coast
San Diego.....	San Diego.....	87	59.6	84	36	11.56	0	43	189	116	61	Sea coast
Los Angeles.....	Los Angeles.....	283	60.9	96	36	23.29	0	46	193	107	66	Southern California
Riverside.....	Riverside.....	851	62.3	105	25	16.60	1	51	227	94	45	Southern California
Redlands.....	San Bernardino.....	657	60.2	103	21	27.98	0	43	116	226	24	Southern California
San Bernardino.....	Sonoma.....	1352	62.0	102	27	19.87	0	48	241	48	77	West of Coast Range
San Jose.....	Marin.....	181	53.9	97	21	32.35	0	73	250	18	98	West of Coast Range
Mt. Tamalpais.....	San Jose.....	2375	55.9	92	27	28.94	13	100	218	59	89	West of Coast Range
Lick Observatory.....	San Jose.....	4299	52.6	88	18	34.23	6	82	252	38	76	West of Coast Range
San Jose.....	San Jose.....	95	56.9	98	27	17.23	1	66	229	53	84	West of Coast Range
Hollister.....	San Benito.....	284	55.5	100	25	19.91	0	68	224	54	88	West of Coast Range
Los Gatos.....	San Jose.....	600	57.6	104	31	38.60	0	69	223	46	87	West of Coast Range
Paso Robles.....	San Luis Obispo.....	800	57.9	112	13	29.87	0	63	265	65	36	West of Coast Range
Jjai Valley.....	Ventura.....	900	59.1	105	25	36.25	0	47	270	62	34	West of Coast Range
Imperial.....	Imperial.....	-20	72.4	114	21	5.12	0	10	293	60	13	Southeastern California
Salixio.....	Imperial.....	0	71.1	116	25	4.44	0	11	337	10	19	Southeastern California
Merced.....	Riverside.....	-185	71.4	119	20	3.17	0	9	264	77	25	Southeastern California

T—Indicates trace of precipitation.



THE DEVELOPMENT OF AGRICULTURE IN CALIFORNIA

The remarkable growth of the State is shown by the following tables, giving the acreage of the most important crops in 1862, in 1910 and in 1916:

	1862 Agr. report acres	1910 Census report acres	1916 United States Crop Reporter acres
Indian corn.....	17,339	51,935	64,000
Wheat.....	361,351	478,637	350,000
Rye.....	1,415	7,027	8,000
Oats.....	36,607	192,158	200,000
Barley.....	223,217	1,195,158	1,190,000
Potatoes.....	3,624	72,799	75,000
Hay.....	250,464	2,049,213	2,500,000
Total.....	894,017	4,046,927	4,387,000

To these figures should be added the following acreages not mentioned in the 1862 report:

	1910	1915	1916
Hops.....	8,391	14,353	19,991
Celery.....	5,600	3,695	2,868
Beans.....	157,825	225,211	256,041
Standing alfalfa.....	487,134	805,855	862,534
Cotton.....	15,000	23,140	45,715
Sugar beets.....	101,000	118,034	144,200
Kaffir corn, etc.....	50,194	.....	.....
Rice.....	.....	.....	80,260
Totals.....	825,144	1,190,288	1,411,609

Besides this increase in acreage of the staple crops, California had, according to the reports of the State Board of Equalization, vines and fruit trees as follows, bearing and not bearing in 1915-16:

Vineyards

	No. of acres	
	1910	1916
Table grapes.....	53,729	65,940
Raisin grapes.....	128,217	127,130
Wine grapes.....	160,573	162,939
	342,519	356,009

Orchards

Deciduous Fruits		No. of Trees	
		1910	1916
Apple.....	2,143,815	3,161,311	
Apricot.....	2,593,884	3,478,487	
Cherry.....	601,520	958,576	
Fig.....	549,875	639,483	
Nectarine.....	63,773	.....	
Olive.....	1,190,452	1,350,160	
Peach.....	10,922,994	12,205,298	
Pear.....	1,499,932	2,727,061	
Plum.....	1,059,453	1,344,186	
Prune.....	8,998,831	10,862,746	
Total.....	19,624,529	36,727,308	

Citrus Fruits	No. of Trees	
	1910	1916
Orange.....	10,803,221	10,464,688
Lemon.....	1,810,616	2,578,700
Pomelo.....	18,886	245,447
Lime.....	1,716	1,021
Total	12,634,439	13,289,856
Nuts		
Almond.....	1,204,382	2,300,903
Walnut.....	891,147	1,729,736
Total	2,095,529	4,030,639

CITRUS FRUITS

According to statistics compiled by the Citrus Protective League, the shipments of citrus fruits for the season 1915-16 were 1,729 cars below those of 1914-15. While the last lemon crop was the largest California has ever produced, the orange crop was smaller than that of the preceding year.

The record of shipments for the last sixteen years is as follows:

Shipments of Citrus Fruits from California

Season (Nov. 1—Oct. 31)	CARS		
	Oranges	Lemons	Total
1900-01.....			24,900
1901-02.....			19,180
1902-03.....			23,871
1903-04.....	26,160	3,239	29,399
1904-05.....	26,044	5,378	31,422
1905-06.....	23,697	3,913	27,610
1906-07.....	26,313	3,507	29,820
1907-08.....	27,770	4,959	32,729
1908-09.....	34,320	6,196	40,516
1909-10.....	28,317	4,782	33,099
1910-11.....	39,630	6,764	46,394
1911-12.....	34,329	5,961	40,290
1912-13.....	15,893	2,192	18,085
1913-14.....	45,594	2,954	48,548
1914-15.....	39,744	7,068	46,812
1915-16.....	37,897	7,186	45,083

The value of the citrus fruit crop according to figures computed by the California Fruit Growers Exchange amounted to \$41,348,000.00.

Shipments of Citrus Fruits from Different Sections

	Season 1913-14 Cars	Season 1914-15 Cars	Season 1915-16 Cars
Oranges from Southern California.....	39,024	33,317	31,871
Oranges from Central and Northern California.....	2,954	6,427	6,026
Lemons from California.....	6,570	7,068	7,186
Total	48,548	46,812	45,083

The following table shows the supply of lemons in the United States for three four-year periods and the estimated supply for the fiscal year 1915-16 ending June 30, 1916:

5-year average	Imports tons	California shipments tons	Total tons	Increase over last 5 years
1900-04.....	78,750	28,620	107,370	.....
1905-09.....	74,531	52,963	127,494	18.8%
1910-14.....	80,942	63,812	144,754	13.5
1915-16.....	52,706	101,432	154,138	6.5

DECIDUOUS FRUIT IN CALIFORNIA

The last report of the State Horticultural Commission gives the acreage of deciduous fruit trees in 1916 as follows: Apple, 61,752; apricot, 96,716; cherry, 13,484; fig, 10,872; peach, 107,971; pear, 40,324; plum, 22,805.

The total production in 1916 can only be approximated. The three leading railroads report shipments of 17,890 carloads. In the table below the figures are for actual carloads, without regard to the number of tons in a car. The minimum fixed by the railway companies is thirteen tons to a carload, but a carload is often thirty tons. In bringing together figures from different sources, it should be borne in mind that some authorities use the ten-ton limit, while others count actual carloads. The following figures are supplied by "The California Fruit News," which is one of our most reliable sources of information:

Fresh Deciduous Fruit Shipments from North of Tehachapi, in Actual Carloads

Variety	1908	1909	1910	1911	1912	1913	1914	1915	1916
Apricots.....	231¼	208¼	289¼	223½	195½	158¼	382	392¼	289½
Cherries.....	208¼	249¾	250½	216¼	244¼	230¼	166¼	205¼	164
Grapes.....	3,816¼	5,875	4,947½	6,374½	6,357½	6,363¼	8,773	9,563¼	9,721
Peaches.....	1,980¼	2,599	2,517¾	2,027	1,621¼	2,359	2,144¼	1,688¾	1,909½
Pears.....	2,701½	2,638	2,361	2,324¾	3,134½	2,459¾	2,725¼	2,645¾	3,701
Plums.....	1,763	1,526¾	1,552½	1,366	1,775½	1,706¼	1,906½	2,224½	1,998½
Sundry.....	.....	20¼	17	16¼	15¼	18¼	49	58¼	106½
Apples (below)	2,216	.....	.....	.....	.....	.....	.....	.....	.....
Total carloads	12,917	13,117	11,936	12,548¼	13,343¼	13,331¼	16,146¼	16,778	17,890

Apples

It is shown by the report of the State Horticultural Commission that there are 39,602 bearing and 22,150 non-bearing apple trees in the State. Statistics from the United States Department of Agriculture show an increase of 355,000 barrels in this year's production, the figures being as follows: 1915—1,563,000 and 1916—1,918,000 barrels.

According to the California Fruit News, the dried apple output for 1916 amounted to 4,500 tons.

Pajaro Valley is the most important apple producing section of the State and the Chief Apple Inspector of the State Commission of Horticulture gives the following estimate relative to the shipments from this district:

Newtown pippin.....	2,100 cars
Bellefleurs.....	900 "
Mixed varieties.....	600 "
Total.....	3,600 cars

The Gold Ridge or Sebastopol District specializes on Gravensteins to which probably three-fourths of the non-bearing acreage is planted. This apple is peculiarly adapted to this section and is ready for shipment from six weeks to two months earlier than the same variety produced in other sections of the United States and Canada. Shipments for 1916 were as follows:

Green apples.....	500 cars
Dried apples.....	80 cars
Canned apples.....	30 cars
Total.....	610 cars

Prunes

Next to raisins (the figures for which are given on another page under the heading of grapes), prunes are most important in the list of dried fruits. While they are grown commercially in about one-half of the counties of the State, Santa Clara and Sonoma Counties lead in production. The State Board of Equalization reports 61,611 bearing, 4,722 non-bearing acres in Santa Clara County and 8,905 bearing, 447 non-bearing acres in Sonoma County. The value of the 1916 crop has been roughly estimated at \$8,000,000.

CALIFORNIA PRUNE OUTPUT, 1899-1916.

Year	Tons	Year	Tons
1899.....	56,863	1908.....	28,500
1900.....	87,000	1909.....	77,500
1901.....	40,800	1910.....	45,000
1902.....	98,500	1911.....	88,000
1903.....	82,500	1912.....	97,000
1904.....	67,500	1913.....	45,000
1905.....	31,250	1914.....	56,000
1906.....	92,500	1915.....	84,000
1907.....	53,000	1916.....	68,500

BERRY GROWING IN CALIFORNIA

Information on the berry growing industry is somewhat difficult to obtain as statistics have not been carefully kept on this subject. However, this is an important industry and from reports submitted by various authorities the following figures are given.

Los Angeles County Horticultural Commissioner reports as follows:

No. of Acres	Variety	Production Crates	Value
4001	Blackberries.....	223,572	\$ 220,000.00
272	Loganberries.....	92,201	95,000.00
349	Raspberries.....	88,416	95,000.00
2520	Strawberries.....	1,768,620	1,250,000.00

Santa Clara County's report, estimated by Mr. Joseph T. Brooks, Secretary of the San Jose Chamber of Commerce, is as follows:

"There are approximately 1,000 acres of strawberries in Santa Clara County; those in full bearing yield about 200 chests averaging 60 tons each to the acre, making a total annual output of between 2,500 and 3,000 tons. The total production of all other kinds of berries is about 4,000 tons, this quantity varying from year to year according to the season."

Sebastopol berry growers report between 1,700 and 1,800 acres. A large portion of this acreage is planted between rows of apples. Under favorable climatic conditions the approximate average yield in this district is about as follows: •

Variety of Berry	Time of Harvesting	No. of Tons
Lawton blackberries.....	July 1st to Sept. 10th.....	2,000
Mammoth blackberries.....	June 1st to August 1st.....	900
Loganberries.....	June 1st to August 1st.....	1,250
Raspberries.....	June 1st to July 15th.....	15

Orange County, through their Assessor, James Sleeper, reports 200 acres of strawberries and 20 acres of raspberries. These two varieties are the only ones grown in this County on a commercial scale. The annual value of the berry crop in this County averages \$40,000.00.

Sacramento County Horticultural Commissioner reports 2,000 acres of strawberries and 150 acres of blackberries, raspberries, etc.

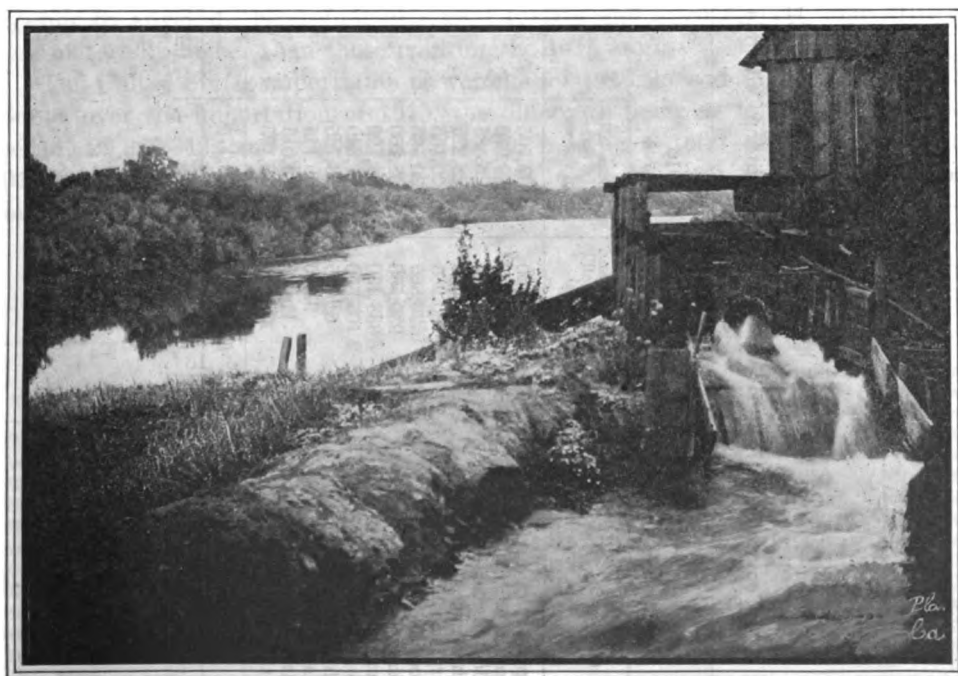
THE CANNING INDUSTRY IN CALIFORNIA

California Fruit Canning Season

(J. K. Armsby Co.)

Approximate Period of Packing the Different Varieties.

Apricots.....	Latter part of June to latter part of August.
Blackberries.....	Latter part of June to fore part of September.
Cherries.....	Latter part of May to middle of July.
Currants.....	Last three weeks of June.
Gooseberries.....	Latter part of May to latter part of June.
Grapes.....	Fore part of September to end of October.
Nectarines.....	Latter part of July to fore part of September.
Pears.....	Latter part of July to latter part of September.
Peaches, Free.....	Latter part of July to middle of October.
Peaches, L. C.....	Latter part of July to middle of October.
Peaches, W. C.....	Middle of August to middle of October.
Plums, Green Gage.....	Middle of July to middle of September.
Plums, Egg.....	Middle of July to middle of September.
Plums, Golden Drop.....	Fore part of August to fore part of September.
Plums, Damson.....	Latter part of August to latter part of October.
Quinces.....	Middle of September to middle of November.
Strawberries.....	Fore part of May to latter part of October.



PUMPING PLANT.

Canned Fruit Pack

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Fruits—	1916 Cases			1915 Cases			1914 Cases		
	No. 2½, 3, and smaller (all grades)	Gallons (all grades) number of dozens		No. 2½, 3 and smaller (all grades)	Gallons (all grades) number of dozens		No. 2½, 3 and smaller (all grades)	Gallons (all grades) number of dozens	
Apples.....	15,820	197,705		3,050	39,285		9,185	84,225	
Apricots.....	937,800	389,970		703,550	138,820		949,475	192,880	
Blackberries.....	35,845	126,585		41,595	64,170		24,080	59,790	
Cherries.....	140,560	28,225		155,680	13,535		97,295	8,930	
Grapes.....	80,965	20,165		66,480	5,565		43,210	6,475	
Loganberries.....	26,865	30,565		11,913	13,323		10,900	5,000	
Pears.....	930,550	102,260		749,200	39,215		749,425	56,315	
Peaches, free.....	838,150	364,790		502,875	164,500		684,050	204,075	
Peaches, cling.....	2,105,550	491,840		1,891,100	258,275		2,325,275	296,380	
Plums.....	61,005	23,745		66,585	14,315		89,400	21,040	
Raspberries.....	9,325	9,115		3,430	815		3,890	580	
Strawberries.....	11,025	3,015		4,997	2,820		16,140	1,985	
Other fruits.....	20,340	20,185		7,475	6,980		17,305	11,560	
Total fruits.....	5,213,800	1,808,175		4,207,930	761,618		5,019,630	949,245	
Grand total fruits (cases).....			7,021,975			4,969,548			5,968,875

Canned Fruit Pack 1901-16

Year	Cases	Year	Cases
1901.....	2,837,982	1909.....	3,561,173
1902.....	2,410,407	1910.....	4,774,156
1903.....	2,928,515	1911.....	4,835,404
1904.....	3,010,210	1912.....	5,463,730
1905.....	3,450,037	1913.....	4,852,090
1906.....	3,612,660	1914.....	6,918,120
1907.....	3,480,469	1915.....	5,731,166
1908.....	5,242,078	1916.....	7,021,975

ALMONDS AND WALNUTS

The production of almonds fluctuates greatly, the crop of 1914 being only a little more than one-half of that of 1912, which was a record year. According to the figures given in the Annual Review of the "California Fruit News" the production of almonds in 1910 amounted to 3,300 tons. In 1916, however, according to the estimate made by the same authority, the crop will amount to 3,400 tons. The import of almonds for 1915-16 were: Not shelled, 2,929,155 pounds, and shelled, 13,667,766 pounds, making as a total 16,596,921 pounds. As California produces approximately 95% of this variety of nut grown in this country, there is every reason to believe that the future of this industry is assured.

The estimated walnut tonnage for 1916 according to the "California Fruit News," is 12,800 tons. This makes it the second largest crop yet produced, 1915 having been 14,825 tons and the next largest before this year, 1911, with 12,500 tons. The California Walnut Growers Association reports that the quality of the crop of 1916 was superior to any crop heretofore in regard to size and appearance. The 1916 prices were materially higher than those paid for the 1915 crop.

The United States importation of walnuts for 1916 showed an increase of 3,413,096 pounds over the importation of 1915, the difference being as follows: 1914-15—Not shelled, 22,338,348, and shelled, 11,107,490, making a total of 33,445,838 pounds. 1915-16—Not shelled, 22,630,220, and shelled, 14,228,714, making a total of 36,858,934 pounds.

Almond and Walnut Production, 1895-1916

Year	Almonds Tons	Walnuts Tons	Year	Almonds Tons	Walnuts Tons
1895.....	825	2,310	1906.....	750	7,000
1896.....	1,605	4,115	1907.....	750	7,400
1897.....	2,375	3,985	1908.....	2,900	9,200
1898.....	450	5,650	1909.....	1,500	9,350
1899.....	2,320	5,530	1910.....	3,300	9,600
1900.....	2,740	5,430	1911.....	1,450	12,500
1901.....	1,500	6,900	1912.....	3,000	11,250
1902.....	3,270	8,570	1913.....	1,100	11,350
1903.....	3,200	5,500	1914.....	2,250	8,900
1904.....	800	7,590	1915.....	3,500	14,825
1905.....	2,100	6,400	*1916.....	3,400	12,800

*Estimated.

THE OLIVE INDUSTRY

Olive culture is one of the oldest fruit industries of California. The first grove was planted in San Diego in 1769, and that county is still a large producer of olives and olive oil. Each year shows increased plantings, there now being thirty-eight counties ranging from San Diego in the south to Shasta in the north in which there are more than 1,000 trees. The number of trees in the spring of 1916, as reported by the State Board of Equalization were 834,939 bearing and 515,221 non-bearing, divided as follows:

Riverside.....	108,480	Butte.....	50,000
Tulare.....	84,840	Fresno.....	48,950
Tehama.....	74,720	San Bernardino.....	42,900
Los Angeles.....	65,986	Sonoma.....	41,710

It is interesting to note, however, that Butte County has 200,000 non-bearing trees, the largest number of any county in the State.

Statistics are difficult to obtain but this industry is becoming more attractive and remunerative, and the removal of competition with adulterated oil by the Pure Food regulations has given an impetus to planting new trees. It is estimated that the annual production of olive oil amounts to 1,000,000 gallons and 300,000 cases of packed olives of six gallons to the case.

For 1915-16, the figures given by the "California Fruit News" show an importation of 7,224,431 gallons of oil and 5,938,446 gallons of olives.

Among the largest olive groves reported in the State is that of Sylmar (near Los Angeles) with 1,200 acres under one management, and a 2,000-acre tract near Porterville.

The California ripe olive has rapidly come into favor. During the year 1914-15 it appeared on the market in a form known as the dehydrated olive, which has become very popular. In 1916 still another form appeared under the name of the Greek Olive, which is a ripe olive cured by a salt process similar to that used in Greece. Owing to the fact that the importation of this article is entirely cut off on account of the European war, the California product finds a ready market among the Greek and Turkish residents of the United States, by whom it is largely consumed.

It is interesting to note that the three largest ripe olive packing plants in the world are located in Butte County, California. A process which enables ripe pickled olives to be shipped without liquid of any kind, thus saving the freight charges and making them easier to handle, has been contributed by the University of California.

THE AVOCADO

While the raising of avocados is still in its infancy, it promises to become a popular industry in the State. According to the report of the California Avocado Association there are approximately 25,000 budded trees in the State planted in orchard form. Of this number probably 15,000 are of what would be considered first class marketable varieties. The better known trees in the vicinity of Los Angeles bear from 400 to as high as 2,000 fruits each, which, when sold at the current prices of 50c to \$1.00 each, give a handsome income. Such returns must, however, be considered as exceptional and of little interest to the prospective planter. It should be stated, however, that at the present prices for fruit, an income of \$200 per tree would be considered ordinary.

There are approximately 35,600 trees in nursery stock of which 20,000 will be planted this year. Under present conditions large plantings of nursery stock is not possible because of the fact that Mexican seed can not be imported. Native grown seed is rapidly increasing and the development of the industry will not be seriously affected. It will be several years before the production of good avocados will begin to increase rapidly, as the newly planted orchards will not come into full bearing until that time, and there is no doubt but that the demand will increase with the supply. The avocado has the highest food value of any fruit cultivated, and is certain to become a standard commercial article, as the knowledge of its cultivation and use is extended.

CALIFORNIA DATES

Reports from the Coachella Valley Date Growers' Association show that the production of dates in California in 1916 was about 65,000 pounds of excellent fruit which found a ready market at the standard price of \$1.00 per pound. The Deglet Noor palms often produce from 100 to 150 pounds per tree and the quality of the fruit and its sugar content surpasses the same variety grown in its original home in the oases of the Sahara. In the nine years in which this crop has been grown in the Coachella Valley there has never been a crop failure, the fruit ripening to perfection and carrying a sugar content of from 54% to 70%, which insures its keeping indefinitely. There are now growing in Coachella Valley about 40,000 imported palms and nearly one million seedlings. About 100,000 pedigreed date seeds are being planted this season.

Imperial Valley is second in importance in this industry. According to Mr. B. Suryieh, of the Imperial Valley Investigation Station, climatic conditions of Imperial Valley permit of the perfect ripening of the palms of first-class packing dates which are shipped to discriminating markets and have commanded such unqualified approval that it has been impossible to fill last season's orders. There are now growing in Imperial Valley 1,000 imported palms; and, according to Mr. F. W. Waite, Horticultural Commissioner of Imperial County, there are 26,550 seedlings of which 1,090 are in bearing.

Food chemists and medical experts agree that each acre of dates will feed more people than any other known crop, and in view of the fact that there are so few parts of the world where this crop is successfully grown, there seems to be no doubt but that the demand will always far exceed the supply.

GRAPES AND RAISINS

California is the most important factor in viticulture in the United States. It has over 90,000,000 vines, more than all the rest of the states in the Union. It represents an investment of \$150,000,000, which returns an annual income to the grower of over \$20,000,000. Over 100,000 people are dependent upon California's viticultural industry. This includes 15,000 heads of families that own vineyards, 700 wine-makers, and the laborers who do the picking and hauling, besides those employed in the wineries and those engaged in cultivating and handling our raisin and table grapes.

According to the 1916 report of the State Board of Equalization 356,009 acres were devoted to grape growing in the spring of 1916. Of the total, 65,940 were devoted to table grapes, 127,130 to raisin grapes, and 162,939 to wine grapes.

Table Grapes

During the season of 1916, 10,741 cars of grapes were shipped to points outside the State. Of this total number, the State Viticultural Board makes the following classification:

Table grapes shipped in crated form.....	9,556 cars
Table grapes shipped in drums and kegs packed in redwood sawdust.....	350 cars
Wine grapes shipped in refrigerator and box cars.....	835 cars

The average selling price delivered in the East, of a car of Malagas, was \$1,150; of Tokays, \$1,250; of Emperors, \$1,225.

The estimated selling price in the East of the aggregate of 10,741 cars of grapes, including wine grapes, is \$13,000,000. Freight and refrigeration on the table grapes shipped in crates and in drums is estimated at \$3,700,000, leaving a net selling price f. o. b. California of \$8,180,000 for table grapes. From this amount there should be deducted the selling commission or brokerage of 7 per cent, and after that the cost of loading, packing, crates, harvesting and expense of conducting the vineyard throughout the year to arrive at the growers' net returns.

In addition to the above mentioned exportation of California table grapes, approximately 1,000 carloads are consumed within the State or sent in express shipments in less than carload lots to neighboring states. This means an additional production of 1,000 cars to the figures given in the preceding paragraphs.

The wine grapes shipped East netted the shippers f. o. b. their stations in California approximately \$188,000.

California Raisin Crop

The center of the raisin industry is in Fresno County, although raisin grapes are grown in twenty-two counties of the State.

Year	Tons	Year	Tons
1898.....	40,365	1907.....	60,000
1899.....	35,784	1908.....	60,000
1900.....	47,167	1909.....	70,000
1901.....	37,125	1910.....	58,000
1902.....	54,375	1911.....	67,500
1903.....	60,000	1912.....	85,000
1904.....	37,500	1913.....	65,000
1905.....	43,750	1914.....	90,000
1906.....	47,500	1915.....	124,000
		1916.....	128,500

According to the report of the State Board of Equalization for 1916 of the fifty-eight counties in California only eight have more than 1,000 acres of raisin grapes in bearing as is shown by the following table:

County	Acres	County	Acres
Fresno.....	15,320	Sutter.....	2,905
Tulare.....	15,320	San Diego.....	2,630
Kings.....	13,450	Madera.....	2,388
Colusa.....	3,000	Yolo.....	1,300

The 1916 production of the leading varieties is estimated by the California Associated Raisin Company as follows: Muscat raisins, 85,000 tons; Thompson Seedless, 32,000 tons; Sultanas, 8,000 tons; all other varieties, 3,500 tons. Total, 128,500 tons.

As prices are slightly higher, the gross value of the State's crop, including packing, is about fifteen million dollars.

Seeded Raisins

Fresno County is the center of the seeded raisin industry, where it originated. The following figures (which are only approximate) show the wonderful increase in this popular form of raisins in California during the last twenty years:

Year	Tons	Year	Tons
1897.....	3,500	1907.....	26,000
1898.....	7,000	1908.....	24,000
1899.....	12,000	1909.....	28,000
1900.....	14,000	1910.....	31,500
1901.....	14,000	1911.....	33,000
1902.....	16,000	1912.....	35,500
1903.....	18,000	1913.....	35,000
1904.....	18,000	1914.....	40,000
1905.....	21,000	1915.....	45,000
1906.....	24,000	1916.....	45,000

WINES AND BRANDY

As compared with the 1915 vintage, the season of 1916 witnessed a revival of activity that created a hopeful spirit among the wine-grape vineyardists. The great reduction of the excessive Federal tax on brandy used in the fortification of sweet wines had the effect of bringing back to California its normal standards in the matter of wine production, and consequently the consumption by the wineries of a great quantity of wine grapes at prices more remunerative than for several years.

The State Viticultural Board estimates that the tonnage of grapes used in wine and brandy making during 1916 was 478,197 tons, and the purchase price paid to vineyardists for these grapes was \$7,500,000, or an average of \$15 per ton at the vineyards. In the sweet wine districts the prevailing price was \$15 per ton for wine grapes; in dry wine districts \$22 to \$25 per ton, and in the case of table and raisin grape culls \$7.50 to \$8.50 per ton.

About 23,000,000 gallons of dry wine were produced in 1916. In the well-recognized dry wine districts the yield was far short of normal; but in the sweet wine sections the manufacture of dry wine was resorted to in greater degree than ever before. It required 153,000 tons of grapes to produce 23,000,000 gallons of dry wines.

In the First Internal Revenue District of California, which comprises the counties north of the Tehachapi, the production of sweet wine was 15,184,575 gallons while in the Sixth Internal Revenue District, comprising the counties of Southern California, the production was 4,077,897 gallons. The total in the two collection districts of the State was 19,262,475 gallons, and in the manufacture of this amount 240,756 tons of grapes were required.

Brandy production presumably for commercial purposes, and not for use in fortification, amounted to 2,786,357 proof gallons in the First Internal Revenue District, and 241,535 proof gallons in the Sixth District, a total of 3,027,892 gallons. It required 84,100 tons of grapes to produce this amount of brandy.

The champagne output was about a million bottles but not over 50,000 gallons of grape juice were produced in California in 1916.

Wine and Brandy Production, 1898-1916

Year	Dry Wines Gals.	Sweet Wines Gals.	Brandy Gals.
1898.....	10,750,000	7,779,000	1,250,000
1899.....	15,103,000	8,330,000	1,699,035
1900.....	16,737,260	6,940,300	3,256,513
1901.....	16,473,731	6,270,300	1,688,482
1902.....	28,224,146	14,835,146	4,564,173
1903.....	21,900,500	12,670,356	1,972,000
1904.....	15,589,342	13,571,856	4,420,839
1905.....	20,000,000	10,700,000	1,750,000
1906.....	26,000,000	15,000,000	1,250,000
1907.....	27,500,500	15,500,000	1,345,000
1908.....	22,500,000	14,750,000	1,500,000
1909.....	27,000,000	18,000,000	2,000,000
1910.....	27,500,000	18,000,000	2,500,000
1911.....	26,000,000	23,280,044	2,000,000
1912.....	22,500,000	17,797,781	1,799,539
1913.....	25,000,000	17,307,600	1,695,406
1914.....	22,000,000	16,620,212	3,320,744
1915.....	21,571,000	4,035,240	2,613,286
1916.....	23,000,000	19,262,475	3,027,892

Export of Wine by Sea

Year	Cases	Gallons	Number of Countries Receiving
1908.....		4,250,799	12
1909.....		7,440,294	23
1910.....		9,866,539	26
1911.....	11,535	15,125,375	32
1912.....	11,388	13,238,223	33
1913.....	6,933	12,935,239	24
1914.....	11,636	10,461,526	31
1915.....	10,417	8,530,047	25
1916.....	2,124	1,663,666	30

The shipment of wine out of California by sea in bulk amounted to 1,663,666 gallons and 2,124 cases. There was a pronounced increase in the shipments of wine to the countries bordering on the Pacific. Hawaii continued to be the best over-sea customer, while Japan's orders jumped from 110,317 to 315,800 gallons; China raised her import of California wine from 31,607 to 84,771 gallons. The Philippines doubled their use of California wines and South America did even better. Hong Kong's supply increased from 3,811 gallons in 1915 to 19,772 gallons in 1916, while Australia which used only 92 gallons in 1915, ordered 3,492 last year.

Shipments by sea to New York ceased in March, and as a result they fell from 6,854,035 in 1915 to 107,185 gallons last year. This, however, was more than made up by the remarkable shipments by land, which amounted to more than the combined rail shipments of 1914 and 1915. It is estimated that the exports by rail, including the wines in cases, were 24,759,613, against 11,030,771 gallons in 1915 and 12,072,281 in 1914.

In 1914 considerable California wine was shipped to Germany, France, Belgium, Switzerland and South Africa, but the war has temporarily closed this market. England, Scotland, Sweden and Denmark, however, have continued to import California wines and brandies.

Output of Cured Fruits, including Prunes and Raisins

("California Fruit News")

	1911 Tons	1912 Tons	1913 Tons	1914 Tons	1915 Tons	1916 Tons
Apples.....	3,500	3,600	1,900	4,500	4,000	4,500
Apricots.....	11,000	20,000	10,500	20,500	19,500	10,900
Figs.....	5,500	5,000	5,000	6,500	8,600	6,700
Peaches.....	14,000	30,000	23,000	37,000	32,000	28,000
Prunes.....	95,000	102,500	48,000	56,000	92,500	68,500
Raisins.....	65,000	95,000	65,000	98,000	127,000	115,500
Various other.....	3,750	3,000	2,000	2,500	2,000	3,000
Total tons.....	197,750	259,100	155,400	225,000	285,600	237,100

VEGETABLES IN CALIFORNIA

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

Complete statistics are not available, there being no accurate data with regard to the amount of fresh vegetables supplied to the home markets. The shipments of fresh vegetables to Eastern markets in 1916 amounted to about 351,265 tons.

Principal Vegetable Districts

Asparagus.....Delta Region, Los Angeles, Alameda.
 Cabbage.....Los Angeles, San Francisco, San Jose.
 Cauliflower....Los Angeles, San Francisco and Alameda.
 Celery.....Los Angeles, San Francisco, Stockton.
 Melons.....Los Angeles, Stockton.
 Potatoes.....Delta Region, Los Angeles, San Francisco and Alameda.
 Tomatoes.....Los Angeles, Delta Region, Alameda.
 Onions.....San Jose, San Francisco, Delta Region and other points.
 Artichokes....Los Angeles, San Jose and other points.
 Lettuce.....Los Angeles, San Jose and other points.
 Rhubarb.....Alameda, Sacramento Valley, San Joaquin Valley, Central California.

Canned Vegetable Pack

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Vegetables—	1916 Cases		1915 Cases		1914 Cases	
Asparagus.....	975,700	15,040	790,900	9,480	762,035	6,775
Beans, string.....	95,150	28,235	65,590	16,315	67,860	9,205
Peas.....	195,410	31,710	167,935	20,732	149,320	12,775
Tomatoes.....	2,067,800	579,500	1,021,325	161,380	1,680,950	212,700
Other vegetables.....	152,725	83,800	93,400	26,125	103,855	22,780
Total vegetables.....	3,486,785	738,285	2,139,150	234,032	2,764,020	264,235
Grand total vegetables (cases)	.....	.....	.....	.....	.....	.....
Grand total pack (cases).....	.....	.....	.....	.....	.....	.....
		4,225,070		2,373,182		3,028,255
		11,247,045		7,342,730		8,997,130

California Vegetable Canning Season

(J. K. Armsby Co.)

Approximate period of packing the different varieties.

Asparagus.....	Latter part of March to middle of June.
String beans.....	Middle of June to end of November.
Peas.....	Middle of May to latter part of June.
Tomatoes.....	Latter part of August to latter part of November.

CANNED VEGETABLE PACK

Covering a period of years

Year	Vegetable Cases	Year	Vegetable Cases
1901.....	1,119,703	1909.....	1,370,605
1902.....	1,227,510	1910.....	2,495,825
1902.....	1,466,475	1911.....	2,786,905
1904.....	1,020,449	1912.....	3,072,835
1905.....	1,277,141	1913.....	2,404,870
1906.....	1,961,840	1914.....	3,292,490
1907.....	2,186,650	1915.....	2,607,214
1908.....	1,609,325	1916.....	4,225,070

POTATOES IN CALIFORNIA

From the Government Crop Report the following interesting figures are taken on the potato production in California.

The acreage in 1916 in California shows a decrease of 3,000 acres, being 75,000 acres in 1916 and 78,000 in 1915. The yield, however, shows a decided increase, the 1916 figures being 10,575,000 bushels against 10,140,000 for 1915. What will be of decided interest to the consumer, however, is the increase in price. In 1915 potatoes sold at 75c per bushel while the price in 1916 is \$1.40.

The following table shows how potato production is distributed over the State:

Delta District.....	44,000 acres @ 80 sacks	3,520,000 sacks
Salinas District.....	3,360 acres @ 60 sacks	201,600 sacks
Watsonville District.....	2,160 acres @ 75 sacks	162,000 sacks
San Francisco District.....	5,000 acres @ 50 sacks	250,000 sacks
Los Angeles District.....	10,000 acres @ 55 sacks	550,000 sacks
Balance of State.....	15,480 acres @ 60 sacks	928,800 sacks

That this State does not produce enough potatoes for local consumption is evident, as we import approximately 1,500,000 sacks of potatoes during the year.

This crop added approximately \$4,230,000 to the wealth of the State in 1916.

Mr. T. A. Burns, of the San Francisco Fruit Distributors, gives the following figures for sweet potatoes and onions:

Sweet Potatoes.....	800,000 crates, value	\$1,200,000
Onions.....	1,400,000 sacks, value	\$2,400,000

Partial List of Vegetable Crops, 1916

Beans, bags.....	3,640,000	\$19,144,000
Sugar beets, tons (paid growers—estimated).....	1,439,000	9,267,160
Onions, bags.....	1,400,000	2,400,000
Potatoes, Irish, bushels.....	10,575,000	14,805,000
Potatoes, sweet, crates.....	800,000	1,200,000
Total.....	17,854,000	\$46,816,160

Beans and Lima Beans

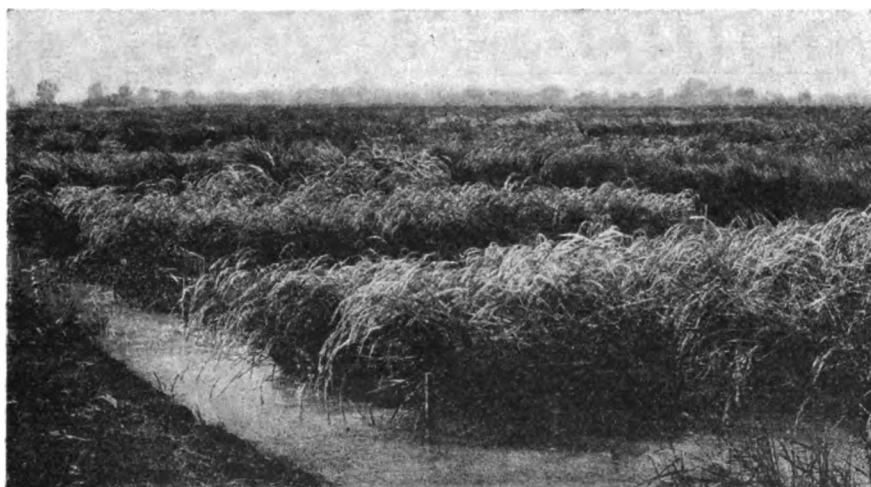
While exact statistics are difficult to obtain, leading authorities estimate the total value of the 1916 bean crop in California at approximately \$20,000,000. One leading authority gives the following classification:

	Quantity bags	Value
Lima beans (80-lb bags)	1,815,000	\$8,349,000
Small whites (90-lb bags)	750,000	5,737,500
Black eyes (80-lb bags)	250,000	850,000
Pink beans (85-lb bags)	825,000	4,207,500
	3,640,000	\$19,144,000

Celery

The "California Vegetable Union" estimates that in Southern California there were about 1,000 acres of celery harvested during the season 1916-17. The production amounted to 600 carloads. In Northern California there were harvested about 2,000 carloads, or a total of 2,600 carloads for this season. Celery brought the highest price during the year 1916 ever known in the history of the industry and averaged about \$350 net a car to the growers. In round figures this was about a million dollar crop this year.

Orange County reported a chili pepper crop valued at \$875,000 in 1916.



RICE FIELD.

SHIPMENTS OUT OF STATE BY RAIL OF FRUITS, WINE, BRANDY AND VEGETABLES

Tons of 2,000 Pounds.

Kinds	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910 By rail	1911 By rail	1912 By rail	1913 By rail	1914 By rail	1915 By rail	1916 By rail
Green deciduous fruits.....	91,176.5	93,673.7	100,390.9	101,198.7	73,983.6	115,083.6	113,679.0	106,065.0	161,224.0	203,275	204,876	187,884	167,603.9	186,393	212,806	264,155	311,471
Citrus fruits.....	226,546.6	323,871.4	225,668.8	299,623.4	385,747.6	454,083.4	383,418.9	413,090.1	399,094.0	475,959	446,384	580,799	479,093.8	238,222	561,136	561,087	559,328
Dried fruits.....	90,052.8	106,987.1	151,944.5	149,531.1	156,769.3	118,479.3	112,176.9	184,821.6	133,846.0	154,756	128,892	114,483	194,175.2	111,783	93,014	160,739	174,988
Raisins.....	36,047.0	43,314.0	47,575.2	39,963.4	54,134.7	32,634.7	42,457.3	.....	29,610.0	61,584	67,278	46,513	.....	39,279	47,688	71,023	80,083 *
Nuts and olives.....	6,518.4	8,462.4	10,918.9	9,377.4	9,810.5	7,610.5	5,131.5	7,198.0	10,887.5	12,438	12,308	12,751	15,399.1	11,611	9,622	18,766	22,640
Canned fruits and vegetables.....	75,556.9	83,229.1	80,634.8	94,204.8	86,077.9	91,877.9	77,026.5	104,024.6	85,135.0	71,223	73,746	83,258	89,946.1	106,908	65,245	115,178	362,895
Raw vegetables.....	.....	.....	.....	.....	.....	.....	.....	.....	93,500.8	86,014	78,829	130,738	129,659.0	147,277	247,512	331,941	351,265
Wine and brandy.....	.....	.....	.....	.....	.....	.....	.....	.....	70,758.2	75,556	82,144	83,952	93,249.8	83,012	53,085	52,276	148,550

*These figures represent shipments on the Southern and Western Pacific Railways only, as the Santa Fe included raisins in dried fruit shipments and kept no separate record.

Carloads 10 Tons Each

Total carloads fresh, dried and canned fruits and vegetables and wines and brandy.

	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
.....	48,072	56,149	55,433	66,708	89,732	77,538	77,538	88,085	.....	.....	.....	.....	.....	.....	92,053	99,409	90,587	90,587	92,457	116,267
.....																				116,913
.....																				92,457
.....																				129,010
.....																				158,415
.....																				201,122

The figures for 1912-15 were reported by the Southern Pacific, Santa Fe and Western Pacific lines. Previous to 1912 the figures reported were from the Southern Pacific and Santa Fe only.

Lack of uniformity in classification of some kinds of products by the several roads prevents their segregation more specially in this table. For instance, in some cases "dried fruits" are made to include prunes and raisins to comply with the economics and methods of account of the freight offices.

Previous to 1910, shipments of fruits, vegetables, etc., by rail and sea were not segregated. The pack of canned fruits and vegetables is given on another page.

Dairy and poultry products, fresh and canned fruits and vegetables, etc., by rail and sea were not segregated. The pack of canned fruits and

FIELD CROPS**GRAIN CROPS**

The acreage devoted to grain in California (with the exception of barley) has been rapidly falling off year by year, for the reason that the large ranches formerly devoted exclusively to grain have been rapidly subdivided and planted to more profitable crops. California is the leading barley producing State in the Union with the production in 1916 of 33,320,000 bushels. This exceeds the next highest State production by 5,582,000 bushels. Oats follow with 6,500,000 bushels. Wheat is the third grain in importance with 5,600,000 bushels. Corn, fourth, with 2,048,000 bushels. Rye, 104,000 bushels.

Fluctuation in Grain Production

The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1899 and of rye since 1907:

Year	Wheat bushels 60 lbs.	Barley bushels 48 lbs.	Corn bushels 56 lbs.	Oats bushels 32 lbs.	Rye bushels 60 lbs.
1899.....	29,666,666	14,046,087	1,536,975	1,845,787	.....
1900.....	20,933,333	19,769,760	1,351,975	1,477,771	.....
1901.....	28,751,500	26,162,780	1,850,793	4,887,374	.....
1902.....	18,759,490	23,489,065	1,839,150	5,148,583	.....
1903.....	14,880,990	21,075,000	1,777,162	5,756,964	.....
1904.....	10,895,216	24,418,604	1,350,000	5,250,000	.....
1905.....	5,660,360	22,094,186	1,204,000	4,735,000	.....
1906.....	8,333,330	26,162,790	1,100,000	4,300,000	.....
1907.....	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908.....	11,680,000	25,427,000	1,600,000	6,700,000	792,000
1909.....	11,550,000	31,270,000	1,740,000	6,280,000	842,000
1910.....	17,100,000	43,400,000	1,838,000	8,325,000	986,000
1911.....	8,640,000	40,600,000	1,836,000	7,140,000	136,000
1912.....	6,270,000	41,760,000	1,924,000	7,800,000	141,000
1913.....	4,200,000	33,150,000	1,815,000	6,636,000	120,000
1914.....	6,800,000	42,060,000	2,160,000	7,700,000	136,000
1915.....	7,040,000	39,440,000	2,624,000	6,963,000	112,000
1916.....	5,600,000	33,320,000	2,048,000	6,500,000	104,000

California Grain Crops in 1916

The following figures are taken from the U. S. Monthly Crop Reporter:

	Acreage	Bushels	Farm Value
Barley.....	1,190,000	33,320,000	\$31,654,000
Wheat.....	350,000	5,600,000	8,512,000
Oats.....	200,000	6,500,000	4,680,000
Corn.....	64,000	2,048,000	2,540,000
Rye.....	8,000	104,000	121,000

It appears from Department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley.

The malting qualities of California barley give it a ready market abroad.

Oats are raised, in some parts of the State, more for hay than for threshing, while corn is but little used as feed for work animals. Barley has long been the main grain feed in California, but of late years oats have come into use to quite an extent. The non-saccharine sorghums are also important in this respect.

The San Francisco Chamber of Commerce reports that 62,556 centals of wheat, 2,372,910 centals of barley, 32,858 centals of oats, 49,596 centals of corn and 585,346 barrels of flour were exported by water from San Francisco last year.

According to the State Board of Equalization the leading grain producing counties are as follows: Barley—Solano, 200,000 acres; Colusa, 180,000; San Joaquin, 140,000; Monterey, 115,000; Stanislaus, 110,000; Yolo, 97,500; Imperial, 83,540; Merced, 82,000; Yuba, 75,000. Wheat—Solano, 140,000 acres; San Luis Obispo, 70,000; Tehama, 58,780; Kern, 55,000. Oats—San Mateo, 38,500 acres; Stanislaus, 35,000; Sacramento, 34,000. Corn—Imperial, 52,207 acres; Merced, 11,400; Inyo, 8,240. Rye—San Bernardino, 10,000 acres; Merced, 9,600; San Joaquin, 6,000; Lassen, 2,000.

HAY AND FORAGE CROP

The hay crop of California is one of its most valuable agricultural products. The census returns for the crop of 1909, a fair year, gave the yield at 4,327,130 tons, valued at \$42,187,215. These returns were as follows:

Crop	Farms reporting	Acres harvested	Quantity Tons	Value
Timothy alone.....	370	13,725	20,001	\$185,579
Timothy and Clover mixed.....	958	46,661	73,183	629,575
Clover alone.....	703	8,519	20,380	213,289
Alfalfa.....	19,904	484,134	1,639,707	13,088,530
Millet or Hungarian grass.....	101	2,142	2,688	27,483
Other tame or cultivated grasses.....	2,274	90,414	119,415	1,253,428
Wild, salt or prairie grasses.....	3,679	253,127	281,033	2,028,494
Grains cut green.....	39,397	1,604,745	2,019,528	24,056,727
Coarse forage.....	2,175	25,868	60,611	438,095
Root forage.....	1,021	4,012	90,586	266,015

The total acreage sown to hay amounted to 2,500,000 acres in 1916 as compared with 2,350,000 acres in 1915. The total yield of all hay in 1916 amounted to 4,375,000 tons as compared with 4,230,000 in 1915. The average price per ton in 1916 was \$12.60 as compared with \$11.20 in 1915, making a total value of the crop \$55,125,000 as compared with \$47,376,000 in 1915.

California grain cut in the milk is highly prized for hay and is sent East by the trainload for feeding racehorses.

Dairying and hog-raising in connection with alfalfa growing is becoming one of the leading industries of the State, being one that is within reach of the man with comparatively small capital.

The State Board of Equalization reported 862,534 acres of standing alfalfa in 1916. The present production of alfalfa in California is about 1,838,000 tons. Lower prices have led to its increased use on the farm and to the introduction of mills for making alfalfa meal. The acreage is steadily increasing and five cuttings may be made yearly on irrigated land, with an average of six tons per acre.

THE BEET SUGAR INDUSTRY

It is almost forgotten now that the beet sugar industry of the United States originated in California, at Alvarado in Alameda County.

The campaign of 1912-13 in California with 1,612 acres produced 980,894 tons of beets, with a sugar output of 155,432 tons of sugar, giving the State second place, next to Colorado. According to the United States Crop Reporter there were 144,200 acres of beets planted in 1916 and 1,439,000 short tons of beets harvested. The sugar content of beets grown in California is greater than any other State, having 16.9 per cent and they accordingly bring higher prices, the California beet selling this year for \$6.44 per ton. The American Beet Sugar Company reports that the production of beet sugar in California for the season of 1916 amounted to 4,727,701 bags of 100 lbs. each, and the estimated value, according to J. K. Armsby Company was \$30,800,000.

The following is a list of beet sugar factories in the State:

Factory	Location	County
American Beet Sugar Co.	Oxnard	Ventura
American Beet Sugar Co.	Chino	San Bernardino
Anaheim Sugar Co.	Anaheim	Orange
Alameda Sugar Co.	Alvarado	Alameda
Holly Sugar Co.	Huntington Beach	Orange
Los Alamitos Sugar Co.	Los Alamitos	Orange
San Joaquin Valley Sugar Co.	Visalia	Tulare
Santa Ana Co-Operative Sugar Co.	Santa Ana	Orange
Southern California Sugar Co.	Santa Ana	Orange
Spreckels Sugar Co.	Spreckels	Monterey
Union Sugar Co.	Betteravia	Santa Barbara

The leading beet sugar counties according to the report of the State Board of Equalization are as follows: Orange, 30,000; Monterey, 25,000; Ventura, 13,300; San Luis Obispo, 10,000; San Joaquin, 10,000.

The plant at Spreckels in Monterey County is said to be the largest beet sugar factory in the world.

RICE

Since the experiments that were carried on several years ago by the U. S. Department of Agriculture as to the adaptability of California soil and climate for successful commercial rice culture, the industry has developed as one of the big new leading crops of the State. Rice grown in California was awarded the gold medal at the Seattle Exposition in 1909.

In 1910, several experimental plantings yielded well. In 1912 the yield from 1,200 acres was 3,500,000 lbs., and was disposed of for approximately \$75,000. In 1913, 6,000 acres were planted with a yield of 19,200,000 lbs.

In 1916 about 60,000 acres of rice was threshed, although perhaps 10,000 acres in excess of this were planted but owing to late sowing did not yield heavily. The harvest, however, was worth at the end of the 1916 season \$3,000,000. Growers, dissatisfied with the prevailing price of \$1.60 per hundred pounds of paddy rice, held their stock with the knowledge that rice was quoted at a less figure than it was sold for the previous year even allowing for the critical war conditions, rice men felt that a better market would develop and their prophecy has proven correct. During April, 1917, a large bulk of the hold-over from 1916 was sold at an average of \$2.75 per hundred pounds, the highest price yet paid for paddy rice in California.

A marked increase in rice acreage will be noticeable in 1917 and as this report goes to press, our information is to the effect that fully 90,000 acres will be under cultivation the current season. The greatest advance in rice culture is being made in Glenn County and under one ditch alone where last year 8,000 acres were planted, 17,000 acres have been allotted water for rice during the 1917 season.

Sacramento Valley is the greatest producing section in California, 90% of the crop coming from that district. There has been a tendency to increase the acreage in the lower San Joaquin Valley, in Tulare and Kern Counties, but possibly not more than 8,000 acres will be under cultivation this year outside of the Sacramento Valley. Butte, Glenn, Colusa, Yolo and Yuba Counties are the principal producing sections in the order named.

Owing to the late plantings as well as high north winds which prevailed during the harvesting season and which dried out and shelled the rice before headers were able to cut, the yield per acre for 1916 was below normal.

In Butte County it is estimated that cost of growing is \$21.55 per acre; cost of harvesting, threshing, etc., on a basis of 3,500 pounds per acre, \$15.75; making the total cost of production \$37.10 per acre. Taking an estimated value of \$70 as an average price, the net profit is approximately \$32.90 per acre.

Statistics from the U. S. Department of Agriculture gave California fourth rank in the production of rice in the United States, with an average yield per acre of 66.7 bushels, while the nearest competitor produced an average of only 48.4.

Rice is much heavier in the stalk than other grains and to successfully and economically harvest it special machinery should be constructed, but so far implement makers have been unable to grasp the situation to the extent of constructing suitable

harvesters, and this fact has been one of the greatest drawbacks to California rice growers; last season it cost from \$3 to \$5 per acre more to harvest rice with the ordinary threshing machines than it did other grains.

Following is a list of rice mills and their capacity in the various sections of the State:

Rice Mills	Capacity per day
Butte County Rice Mills, Biggs.....	4,000 bags paddy rice
M. J. Brandenstein & Co., San Francisco.....	3,000 " " "
Growers Rice Milling Co., Inc., San Francisco.....	3,000 " " "
Pacific Rice Mills, San Francisco.....	3,000 " " "
C. E. Grosjean Rice Milling Co., San Francisco.....	2,800 " " "
Globe Rice Mills, Woodland.....	1,300 " " "
Natoma Rice Milling Co., San Francisco.....	1,000 " " "

FIBRES

COTTON

It is evident from the experience of the past few years that California furnishes one of the big fields for the extension of cotton growing in the United States, although the present acreage is not large as compared to the Southern States. The possibilities of successful culture of high quality cotton are being recognized and the production this year will exceed that of last year by 15,000 to 30,000 bales.

In 1916, 65,000 bales were produced including that grown in the Mexican portion of Imperial Valley. This included about 17,000 bales of Durango and 45,000 bales of short staple, raised in Imperial Valley, the rest coming from the Palo Verde and San Pasqual Valleys. Egyptian cotton has not been grown in the Imperial Valley except experimentally since 1912 when commercial trials did not prove sufficiently profitable to induce the ranchers to extend the planting. Securing labor was the big problem, which must be yet solved before this industry can be extended. The present high prices and the growing demand for the superior staple products has stimulated interest in the planting of Egyptian cotton, and although the acreage this year will be insignificant, a beginning will be made which may mean the ultimate planting of this variety to the exclusion of the short staple product.

Ability to control the moisture supply furnishes a distinct advantage in favor of irrigated land. The average yields so far have been much higher than the average in the South, although not so high as at first anticipated. It is apparent that the yields of short cotton will have to exceed a bale to the acre on the average, on irrigated land to make a profit because of the added cost of water, irrigation attendance, high prices of labor and land generally obtaining in irrigated sections.

At present, by far the largest proportion of cotton is raised in Imperial Valley, where the acreage is rapidly being increased, although Palo Verde and the San Pasqual Valleys along the Colorado River are gaining in importance.

Plantings of cotton on the bottom lands of the San Joaquin and Sacramento Valleys have yielded as high as a bale to the acre without irrigation, which indicates that this crop may be made profitable on much of the irrigated land in the interior valleys.

Wool Production of California

According to the United States Crop Reporter for January, 1917, the total number of sheep in the United States was 48,483,000. The production of wool in the United States estimated by the Bureau of Crop Estimates shows an increase in 1916 of 2,764,000 pounds over figures given for 1915. The average price to producers for unwashed wool averaged during 1916 about 27.6 cents per pound as compared with 22.8 cents in 1915, and 18.4 cents in 1914.

The same report credits California with the production of 1,850,000 fleeces at an average weight of 6.3 pounds each, making a total of 11,600,000 pounds. The average price paid for wool in this State in 1916 was 22c per pound which would make the value of the wool crop \$2,552,000.

Year	Pounds	Year	Pounds
1873.....	32,155,169	1895.....	35,856,690
1874.....	39,356,781	1896.....	27,195,550
1875.....	43,532,223	1897.....	34,882,325
1876.....	56,550,973	1898.....	28,063,240
1877.....	53,110,742	1899.....	28,332,090
1878.....	40,862,091	1900.....	27,750,000
1879.....	46,903,360	1901.....	26,900,000
1880.....	46,074,154	1902.....	21,000,000
1881.....	45,076,639	1903.....	22,000,000
1882.....	40,529,119	1904.....	22,000,000
1883.....	40,848,690	1905.....	22,000,000
1884.....	37,415,330	1906.....	24,000,000
1885.....	36,561,390	1907.....	15,000,000
1886.....	38,509,160	1908.....	15,000,000
1887.....	31,564,231	1909.....	16,000,000
1888.....	32,569,972	1910.....	15,500,000
1889.....	34,008,370	1911.....	14,000,000
1890.....	34,854,640	1912.....	13,500,000
1891.....	33,183,475	1913.....	12,000,000
1892.....	35,802,930	1914.....	11,480,000
1893.....	33,169,375	1915.....	11,590,000
1894.....	36,968,400	1916.....	11,600,000

NOTE—"Pulled" wool not included in table.

FLAX AND HEMP

The culture of these valuable textile plants has lately received an impetus in several localities which promise important developments. The soil in some places along the Sacramento and San Joaquin Rivers is suitable for producing a fine quality of hemp. The California Cotton Mills of Oakland buy nearly all the hemp grown in this State, which is manufactured into twine of various kinds, for all of which there is a market in the State.

It is even claimed that a better quality of hemp is being grown in California than anywhere else in the world. When properly handled after harvesting, it produces from 1,500 to 1,800 pounds per acre of long, clean, silky fibre, selling at from 15 to 18 cents per pound. It is one of the easiest of all crops to grow, requiring nothing except preparation of the soil and seeding; no cultivation is necessary. The harvesting is a simple matter and the machinery required for turning out a ton of fibre a day is not expensive and can be operated by two men. It is probably only a question of a short time until this important fibre industry will receive much more attention.

SILK

Climatic conditions are admirably adapted to the raising of silk worms, although this industry has not yet been placed on a commercial basis. The season of production extends over a period of six or eight months while in Europe it lasts only as many weeks. Government authorities have made favorable reports on California silk, stating that it was suitable for the manufacture of the finest fabrics and was not excelled by the European product. The fact that this State would necessarily come into direct competition with Oriental labor conditions has retarded the growth of the industry materially, but this has been somewhat obviated by the introduction of a filature machine of the latest model, which was imported by the Ladies' Silk Culture Society of California from Italy for demonstration purposes at the P. P. I. E. By this device one person is able to do the work of eight hand operators, which will tend to greatly reduce the cost of production.

THE HOP INDUSTRY

The hop acreage in California, as in other parts of the United States, varies greatly from year to year; if a partial failure of the crop elsewhere sends the price skyward, the following year brings large plantings. Under normal conditions the acreage is fairly consistent.

The last report of the State Board of Equalization gives the total acreage of hops in 1916 as 19,991, twelve counties being listed. Sonoma 3,100, Sacramento 3,000 and Mendocino with 2,800 acres are the three principal hop producing counties in the State. Alameda, Butte, Lake, Shasta, Tehama, Yolo, and Yuba Counties reported more than one hundred but less than two thousand acres.

The principal fields are in the Sacramento Valley, where a failure has never been known and where the quality of the hops closely matches that of the New York and European varieties. The following tables show the extent of the industry:

Hop Production in California

Year	Bales	Pounds	Year	Bales	Pounds
1901.....	48,000	9,120,000	1909.....	69,688	12,892,280
1902.....	53,600	10,165,000	1910.....	71,511	13,229,535
1903.....	57,000	10,545,000	1911.....	93,981	17,367,985
1904.....	63,000	11,655,000	1912.....	117,770	21,198,600
1905.....	.....	13,135,000	1913.....	120,000	22,200,000
1906.....	108,000	20,000,000	1914.....	100,000	18,500,000
1907.....	90,000	16,650,000	1915.....	115,000	21,275,000
1908.....	63,200	11,692,000	1916.....	116,500	21,552,500 (Estimated)

E. Clemens Horst gives the following interesting history of the hop industry in California:

"Up to 1808, hop culture was confined almost exclusively to three New England States, Massachusetts, Vermont and Maine, but owing to the poor soil conditions the industry rapidly spread to New York State which soon had a monopoly on this industry.

"In 1860 the hop plant immigrated westward to Wisconsin and Michigan, and in 1866 when the New York State crop was totally destroyed by vermin, the hop growers of Wisconsin received fabulous prices for their excellent product until their crop was likewise destroyed.

"During the decade 1870 to 1880, New York once more enjoyed a monopoly on hop growing, but by that time fresh competition developed on the Pacific Coast. The hops grown in Sacramento County were a revelation, "fine as silk" in texture, bright in color, clean picked and second only to the best German hops in richness of lupulin.

"Hop production spread to Sonoma, Mendocino, Yolo, Yuba and Tehama Counties, till today, California is the principal hop producing State. The hops are excellent in quality and the rich new soil of Sacramento County produces enormous crops. In one or two well attested instances, reaching the almost incredible yield of 3,000 lbs. per acre and with an average yield per acre of more than twice that of New York State.

"In 1862 hops sold in excess of \$1.00 per pound. In 1886 the entire crop of New York State was destroyed by lice, while the California crop was uninjured, and the hop farmers of this State made enormous profits on their crops. Hop lice cannot live in the climates of the California hop producing counties.

"It is safe to say that now the whole territory of the United States has been tested for hop growing. The culture of hops has settled down at last to New York State, California, Oregon and Washington. The present crop of New York and Washington will average forty to forty-five thousand bales of 100 pounds in each State. Oregon is capable of producing between ninety and hundred and twenty thousand bales, while California produces a steady annual average crop of approximately 110,000 bales.

"Owing to the rapid strides of prohibition in different sections of the United States, and consequent decrease in consumption of hops, combined with the embargoes preventing the importation of American hops to England (our principal market prior to the war), prices are below normal. The growers have not been able to market their hops to advantage, and since the prospects for the future are anything but encouraging, it is safe to predict that from 20% to 30% of the 1917 crop, California hop acreage will be plowed out and the lands replanted to fruit trees and other farm products."

THE BREWERY INDUSTRY

Closely connected with the hop industry is the brewing of beer. This is a much larger industry than most people realize, representing an investment aggregating \$50,000,000. It supports about 20,000 people, 4,000 of whom are directly employed inside the breweries at high wages. The total paid in wages to these 4,000 amounts to about \$6,000,000 a year and their employment is permanent regardless of fluctuations in the market demand for the product.

There are about seventy breweries in the State, many of them small, and the annual production of beer is about 1,350,000 barrels. There are also three large malt houses in the State.

The California breweries use yearly 80,000,000 pounds of the choicest barley, with a value of \$1,600,000; they also use 1,250,000 pounds of hops annually. In addition they spend \$1,500,000 for cooperage, bottles, etc. The revenue paid to the United States Government on beer alone amounts to about \$2,025,000 annually, while about an equal amount goes to the municipal and county governments of the State. Two large Washington breweries have moved to California on account of prohibition legislation.

DAIRY, LIVESTOCK AND POULTRY

THE DAIRY INDUSTRY

Owing to the fact that alfalfa grows the year round, yielding from nine to ten tons per acre, California is becoming one of the leading dairy States in the Union and this industry offers one of the greatest money making possibilities in the State.

The two years covered by the Eleventh Biennial Report of the State Dairy Bureau shows that there has been a great demand for California dairy products from Australia, New Zealand, the Eastern markets and from Europe. Owing to this great demand the market has been kept cleaned up during this period. About four million pounds of butter were shipped to Australia and New Zealand during 1915 and about two million pounds to England and the Eastern markets in the United States during 1916. Good markets for California butter are also being developed in China, Japan, the Philippine Islands and Java.

It is also interesting to note from the Report of the State Dairy Bureau that the value of dairy products has increased \$2,904,711 in the last year, the figure for 1915 being \$38,405,394, and for 1916, \$40,310,105.

Annual Value of Dairy Products of State

1914	
Butter, 59,286,460 pounds.....	\$16,368,992
Cheese, 6,016,815 pounds.....	950,055
Condensed, evaporated and powdered milk, 14,153,401 pounds.....	1,076,300
Casein, 992,917 pounds.....	46,146
Market milk, cream and ice cream.....	11,500,000
Calves produced on dairies.....	2,500,000
Skim milk and buttermilk.....	1,500,000
Total.....	\$33,941,493
1915	
Butter, 67,549,409 pounds.....	\$19,386,680
Cheese, 6,249,775 pounds.....	881,218
Condensed, evaporated and powdered milk, 16,579,317 pounds.....	1,352,959
Casein, 690,750 pounds.....	34,537
Market milk, cream and ice cream.....	12,000,000
Calves produced on dairies.....	3,000,000
Skim milk and buttermilk.....	1,750,000
Total.....	\$38,405,394

1916	
Butter, 70,030,174 pounds.....	\$19,181,264
Cheese, 7,745,124 pounds.....	1,203,592
Condensed, evaporated and powdered milk, 18,610,226 pounds.....	1,488,818
Casein, 1,864,317 pounds.....	186,431
Market milk, cream and ice cream.....	14,000,000
Calves produced on dairies.....	2,500,000
Skim milk and buttermilk.....	1,750,000
Total.....	\$40,310,105

Irrigation and the Dairy Industry

Irrigation has played a most important part in the development of the dairy industry in California, as is shown by the census reports. Many of the now leading dairy counties in the State were twenty-five years ago immense wheat fields, but with the coming of irrigation and intensive agriculture this condition has been materially changed.

The following is a list of the principal butter fat producing counties, both irrigated and non-irrigated, each of which shows a production of over one million pounds for the year:

Counties	1915	1916
Butte.....	1,124,710	2,073,297
Fresno.....	3,158,220	4,204,416
Glenn.....	1,258,020	1,725,746
Humboldt*.....	5,591,870	5,588,604
Imperial.....	6,334,316	6,780,552
Kings.....	3,811,477	3,960,949
Marin.....	2,338,338	2,475,329
Merced.....	4,253,000	4,028,062
Sacramento.....	1,737,511	1,422,051
San Joaquin.....	1,184,658	1,618,455
San Luis Obispo.....	2,759,751	2,303,547
Sonoma*.....	2,965,893	3,071,474
Stanislaus.....	9,973,320	9,980,021
Sutter.....	969,594	1,048,270
Tulare.....	4,787,690	4,677,839
Yolo.....	1,091,496	1,241,083

*Non-irrigated.

Production of Butter (Pounds)

Year	Creamery method	Old method	Totals
1896.....	10,097,323	21,508,117	31,605,440
1897.....	10,866,646	17,811,793	28,678,439
1898.....	10,410,479	13,280,549	23,691,028
1899.....	12,725,814	12,143,270	24,869,084
1900.....	16,486,695	12,296,164	28,782,859
1901.....	19,017,512	10,713,370	29,730,882
1902.....	21,593,021	9,935,741	31,528,763

Since 1902 the total production has increased as follows:

Year	Pounds	Year	Pounds
1903.....	34,676,311	1910.....	45,819,741
1904.....	35,636,909	*1911.....	50,380,736
1905.....	41,961,047	*1912.....	54,940,886
1906.....	44,044,578	*1913.....	55,542,709
1907.....	44,599,211	*1914.....	59,286,460
1908.....	48,469,585	*1915.....	67,549,409
1909.....	49,595,869	*1916.....	70,030,174

*Reported by State Dairy Bureau.

Cheese

There has been more than the usual activity in cheese production during the past year. Owing to the European war the importation of many varieties has been entirely cut off and to meet the demand several large factories have been established for the manufacture of Parmesan, Edam and the Swiss types. It has been demonstrated that Cheddar cheese of the finest quality can be made in this State and finds a ready local market. There is also an increasing demand for the California product in Central and South America, the Hawaiian and Philippine Islands and the Orient, if factories will turn out an article suitable for exportation.

Following are the totals for the past fifteen years:

Cheese Production, 1901-1916

Year	Pounds	Year	Pounds
1901.....	5,681,366	1909.....	5,931,194
1902.....	6,503,441	1910.....	4,648,348
1903.....	7,218,639	1911.....	4,580,495
1904.....	6,133,898	1912.....	4,785,617
1905.....	6,020,672	1913.....	5,600,972
1906.....	6,418,430	1914.....	6,016,815
1907.....	5,928,942	1915.....	6,249,775
1908.....	6,162,514	1916.....	7,745,124

Out of the 58 counties in the State, 55 produced cheese during the year 1916. Monterey has taken first rank with a total output of 1,031,384 pounds for the year.

Counties Producing Over 200,000 Pounds of Cheese in 1916

County	Pounds	County	Pounds
Monterey.....	1,031,384	Humboldt.....	430,030
Santa Clara.....	812,351	Sacramento.....	386,920
Los Angeles.....	659,902	Sonoma.....	378,796
Fresno.....	607,185	San Benito.....	366,001
Stanislaus.....	480,657	Santa Cruz.....	245,974
Marin.....	447,320	Imperial.....	210,990

Dairy Imports

Large quantities of butter and cheese continue to come from the East and from Australasia, notwithstanding the superior advantages presented in this State for enlarging this branch of farming and for creamery development. The San Francisco market alone received in 1915 27,323,500 lbs. of butter and 10,600,600 lbs. of cheese, while the figures for 1916 were 27,877,700 lbs. of butter and 14,460,600 lbs. of cheese.

Butter in San Francisco

	1913-1914		1914-1915		1915-1916	
	Pounds	Price cents	Pounds	Price cents	Pounds	Price cents
October.....	1,538,100	32.48	1,463,600	32.50	1,921,100	26.90
November.....	1,433,300	32.56	1,315,400	34.00	1,732,400	28.59
December.....	1,703,100	31.85	1,735,100	31.50	1,832,500	27.36
January.....	1,931,600	29.92	1,539,600	32.00	1,790,600	28.00
February.....	1,689,900	28.19	1,553,800	30.50	1,766,200	30.54
March.....	2,107,200	22.85	2,575,500	27.50	2,468,600	28.02
April.....	2,811,200	23.06	2,996,300	23.50	3,404,000	26.24
May.....	2,435,300	23.83	3,154,866	24.00	3,259,000	24.78
June.....	1,964,400	24.02	2,775,334	26.00	3,066,000	24.94
July.....	1,871,600	24.55	3,598,800	27.00	2,212,500	26.00
August.....	1,765,500	27.26	2,591,400	28.00	2,283,800	26.83
September.....	1,329,750	30.81	2,023,800	28.00	2,141,100	30.56
Total.....	22,580,950	27.61	27,323,500	28.70	27,877,700	27.39

Cheese in San Francisco

	1913-1914		1914-1915		1915-1916	
	Pounds	Price cents	Pounds	Price cents	Pounds	Price cents
October.....	616,400	17.03	841,500	17.00	869,200	16.46
November.....	776,300	18.37	548,800	16.50	748,000	16.68
December.....	736,100	17.69	538,300	13.50	828,700	16.04
January.....	559,400	18.06	508,400	15.00	767,700	16.40
February.....	704,600	18.89	488,000	14.00	707,800	17.33
March.....	739,700	16.45	603,400	14.50	946,200	17.94
April.....	1,044,700	14.76	775,800	13.00	1,276,600	15.14
May.....	865,100	13.52	796,600	12.00	1,626,000	12.82
June.....	1,282,700	12.99	1,403,300	11.50	1,865,400	14.58
July.....	1,027,300	13.23	1,455,200	13.00	2,100,800	14.09
August.....	1,079,000	14.08	1,248,900	13.00	1,612,400	14.23
September.....	660,200	14.37	1,392,400	16.00	1,111,800	14.75
Total.....	10,091,500	15.79	10,600,600	14.10	14,460,600	15.54

Condensed and Evaporated Milks

Owing to the tariff changes, the condensed and evaporated milk industry has been somewhat unsettled during the past few years. As was quite natural to suppose the manufacturers of this State could not compete successfully with those of foreign countries and prices dropped accordingly. This condition, however, has been somewhat adjusted because of the European conflict and at the present time prices have advanced and there is a ready market for California brands.

There has been a decided increase in the development of this branch of the industry during the past five years, as shown by the following table:

Condensed, Powdered and Evaporated Milk

1912.....	172,309 cases
1913.....	172,800 "
1914.....	274,096 "
1915.....	345,402 "
1916.....	379,212 "

The 1916 production amounted to 18,610,236 pounds valued at \$1,488,818, as against 16,579,317 pounds valued at \$1,352,959 for 1915.

Goat Milk Production

A new branch of the dairy industry was launched in 1915 when a company was incorporated to evaporate goats' milk. This plant is located in Monterey County and is conducted along the lines of an up-to-date certified dairy. The milk is the product of carefully selected stock of the Toggenberg, Anglo-Nubian and Saanen breeds. The value of goats' milk has long been recognized by the medical profession for both infants and invalids, as the animal is practically immune from tuberculosis and the milk is easily digested by the most delicate person. Some difficulty has been experienced in the procuring of fresh goats' milk and this industry seems to be filling a long felt need and promises to become one of considerable importance in the State.

The Three Leading Dairy Counties

According to the last report of the State Dairy Bureau, whose figures are for the year ending September 30, 1916, the following are the three counties which lead in butter production: Stanislaus and Imperial under irrigation, and Humboldt County under non-irrigation.

County	No. of Creameries	Pounds
Stanislaus.....	6	10,850,161
Imperial.....	5	6,780,552
Humboldt.....	9	6,043,614

Butter is, of course, only one of the dairy products, but its valuation approximates at least two-thirds of the total. Detailed figures of the three leading counties for the calendar year 1916 are not complete, but the available figures are as follows, as reported by the leading commercial organization in each county:

Stanislaus County

Article	Weight Pounds	Value
Butter fat and sweet cream.....	10,850,161	\$3,478,561
Condensed milk.....	536,000	80,000
Cheese.....	480,657	76,000
Buttermilk.....	9,600,000	9,600
Total.....	21,466,818	\$3,643,161

Imperial County

Article	Weight Pounds	Value
Butter.....	6,780,552	\$1,857,194
Cheese.....	210,990	32,787
Total.....	6,991,542	\$1,889,981

Imperial Valley realizes no revenue from condensed or dry milk, but its skimmed milk is fed to hogs at an average price of 35c per cwt. There is no cream sold outside of the Valley at present.

Humboldt County*

Article	Weight Pounds	Value
Butter.....	6,043,614	\$1,834,160
Cheese.....	353,800	70,660
Condensed milk.....	5,358,335	391,050
Dry milk.....	1,045,732	142,350
Casein.....	1,979,278	192,040
Fresh Cream and Milk.....	1,186,741	157,130
Total.....	15,967,500	\$2,787,390

*(Estimated)

These figures do not take into account the local consumption of Humboldt County but only cover the shipments by rail and sea, about half going by each route.

HOGS

Mr. J. I. Thompson of the California Swine Breeders Association reports an increase of 5% in the number of hogs raised in the State during the past year. There has been a marked increase in the production of pure bred stock, the number of breeders being approximately 10% greater than it was a year ago. The number of grade hogs produced annually is showing a small yearly increase; however, much of the increased production of 1916 has undoubtedly disappeared owing largely to the fact that the high price of grain made it prohibitive to keep stock of this kind; this, with the increasing demand for pork at high prices has had a tendency to diminish the stock to such an extent that there is but little apparent increase in hog production over last year.

The United States Government Report gives the total number of hogs in California as 994,000 valued at \$10,039,000.

THE POULTRY INDUSTRY

The farm value of poultry and eggs produced in California is about \$18,000,000, according to Mr. George H. Croley, president of the Federated Poultry Association. The leading poultry districts of the State, arranged in order of their importance and value of product, are as follows:

1. Petaluma District, including Santa Rosa and Sebastopol.
2. California south of Tehachapi—eight counties.
3. Hayward-Livermore, including the suburbs of the City of Oakland.
4. Santa Cruz-Watsonville-Salinas.
5. San Jose-Gilroy-Hollister (Santa Clara Valley).
6. Sacramento-Stockton.
7. San Joaquin Valley, excepting that portion included in District No. 6.
8. Sacramento Valley, excepting that portion included in District No. 6.
9. Sonoma-El Verano-Napa.
10. Santa Maria-Arroyo Grande.
11. Martinez-Concord-Walnut Creek (San Ramon Valley).
12. Northwestern Coast District.
13. Northeastern Mountain District.
14. Eastern Mountain District.

The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally.

An average chicken ranch consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, quite a number of larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1 per year.

Notwithstanding the remarkable development of the poultry business in various parts of the State, the increase is not sufficient to meet the demands of the immediate market. The rapidly expanding population of the State requires the importation in season of about 425 carloads of live and 75 carloads of dressed poultry to San Francisco and Los Angeles, besides several million dozen eggs each year from Eastern points, and there is no immediate prospect of the home supply overtaking the market. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County and has the advantage of a very low freight rate to San Francisco. The market business done from that point, and its growth, are reflected in the following figures:

For the last three years this district has shipped about 10,000,000 dozen eggs, but the production of 1916 exceeded that of any other year by over 1,000,000 dozen.

The following figures show the amount and value of the poultry industry for Sonoma County:

	Doz. Eggs	Doz. Poultry
Petaluma section.....	13,101,512	106,032
Other sections of County, including Santa Rosa.....	2,650,100	25,400
Total for County.....	15,751,612	131,432

It is estimated that this industry added \$5,750,000 to the wealth of Sonoma County during the past year.

Kinds	1914			1915			1916		
	No.	Avg. price	Value	No.	Avg. price	Value	No.	Avg. price	Value
Horses.....	503,000	\$100.00	\$50,300,000	493,000	\$96.00	\$47,328,000	468,000	\$ 97.00	\$45,396,000
Mules.....	74,000	120.00	8,880,000	70,000	110.00	7,700,000	70,000	116.00	8,120,000
Milch cows.....	541,000	72.00	38,962,000	568,000	69.00	39,192,000	591,000	67.00	39,597,000
Other cattle.....	1,480,000	39.30	58,164,000	1,558,000	36.30	56,555,000	1,636,000	38.10	62,332,000
Sheep.....	2,500,000	4.50	11,250,000	2,480,000	5.00	12,250,000	2,524,000	6.70	16,911,000
Hogs.....	877,000	10.50	9,208,500	947,000	8.40	7,955,000	994,000	10.10	10,039,000
Total.....	5,975,000	.....	\$176,764,000	6,066,000	.....	\$170,980,000	6,283,000	.....	\$182,395,000

HONEY IN CALIFORNIA

According to the thirteenth United States Census, California is the banner honey producing State of the Union, the output being three times as great as her nearest competitor, Texas.

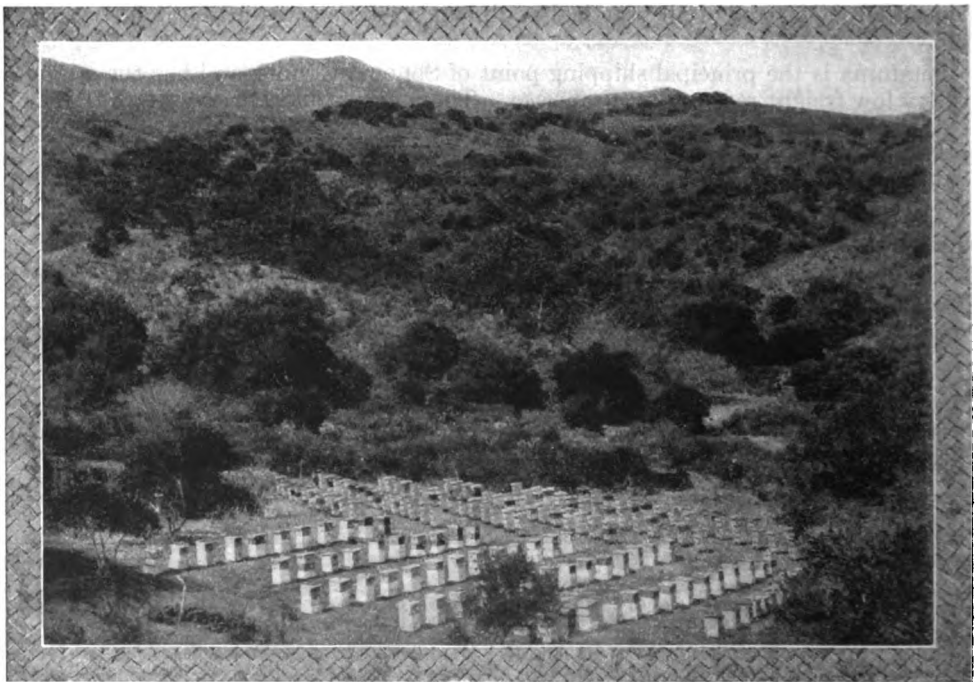
The total honey crop for the State for 1916 was 370 carloads or a total of 11,100,000 pounds. Of this amount 350 carloads were extracted honey, which brought the producer about 6 cents per pound, and 20 carloads of comb honey crop valued at 11 cents per pound, making the total value for the year \$642,000.

While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the southern counties and from the San Joaquin Valley. The Sacramento Valley and the counties north are rapidly developing into first-class bee territory. The leading honey producing counties are Ventura, Los Angeles, San Diego, Riverside, Imperial, and Fresno. In fact, these six counties produce the bulk of the output of the entire State.

About four-fifths of the honey produced in the State is of first and second quality, being produced principally from the sages, alfalfa, oranges, wild buckwheat, wild alfalfa and other excellent honey plants.

The future of beekeeping is bright. The "California State Beekeepers' Association" aids its members in many diversified lines, having established the bee industry of the State upon a firm basis. According to its official organ, the "Western Honey Bee," there are 7,000 beekeepers in the State, owning more than 600,000 colonies of bees, adding to the wealth of the State more than two and a half million dollars annually.

The University of California helps the beekeepers in the matter of education and research, and the State Commission Market is endeavoring to assist them in the distribution of their crops.



AN APIARY ON THE HILLSIDE.

CALIFORNIA'S WATER-POWER RESOURCES

Closely connected with the future of manufacturing development are the fuel and the water-power supply capable of being converted into electrical power. The statistics of the State's wonderful oil production, given on another page, show the abundance of cheap fuel. The following extract from Water Supply Paper No. 234, in the report of the U. S. Geological Survey, shows that the development of hydro-electric power has only begun.

California's Water-Power, 1909

Developed			Undeveloped		
Source	Wheels	Horse-power		Minimum	Maximum Development
Sacramento River.....	576	280,735	Sacramento River.....	2,420,000	4,580,000
San Joaquin River.....	159	86,224	San Joaquin River (including Tulare Lake drainage).....	759,000	3,140,000
Minor streams, southern..	74	50,183	Minor streams, northern	600,000	1,200,000
Minor streams, northern..	176	25,440	Sierra Nevada drainage	132,000	202,000
Sierra Nevada drainage..	74	17,737	Minor streams, southern	36,400	88,300
San Francisco Bay.....	11	6,455			
Totals.....	1,070	466,774	Totals.....	3,947,000	9,210,300

It is calculated that the hydro-electric development since that date has raised the aggregate to 584,511 horse-power. The steam-electric plants are estimated at 355,525 horse-power—less than a million horse-power in all.

The following table, compiled from data supplied by Mr. F. H. Fowler, District Engineer of the U. S. Forest Service, illustrates the speed of recent development:

Hydro-Electric Plants in California

Year	No. of Plants	K. W.	Capacity equal H. P.	Year	No. of Plants	K. W.	Capacity equal H. P.
1892.....	1	480	643	1904.....	41	88,465	118,586
1893.....	2	1,230	1,649	1905.....	50	100,115	134,216
1894.....	2	1,230	1,649	1906.....	54	122,265	163,894
1895.....	4	5,730	7,681	1907.....	58	161,465	216,441
1896.....	7	8,190	10,978	1908.....	67	238,985	320,355
1897.....	9	12,440	10,978	1909.....	69	248,285	332,808
1898.....	15	20,715	27,768	1910.....	71	293,095	392,889
1899.....	19	27,175	36,427	1911.....	71	298,595	400,261
1900.....	20	28,695	38,478	1912.....	72	308,295	413,264
1901.....	23	38,015	50,958	1913.....	78	420,045	563,063
1902.....	27	51,565	69,122	1914.....	79	436,045	584,511
1903.....	33	65,075	67,232	1915.....	76	434,900	582,750

The above figures include not only the hydro-electric plants actually in California but several small plants which are just over the line in Oregon and Nevada, and which are attached to hydro-electric transmission systems partly in California. In addition to the figures given, which represent water-power plants alone, there were at the end of 1915 thirty-eight steam-electric auxiliary plants on the above systems.

The following is taken from an address delivered by Mr. John A. Britton, who is a leading authority on this subject:

The State of California can claim the honor of having been the pioneer in hydro-electric development. The first plant operated in the State followed closely the first one operated in the world, which was at Frankfort-on-the-Main in 1894, and the first commercial hydro-electric high-tension transmission in the State was the plant erected in the town of Folsom and supplying the city of Sacramento; this occurred in the year 1895. The voltage of the line was 11,000; the fall of water 56 feet. Today developments are in operation carrying on lines as high as 150,000 volts, and operating at heads of over 2,000 feet, or at a pressure of approximately 875 pounds per square inch.

California has not hitherto been classed among the States in which manufactures was a leading industry, but with abundant oil for fuel for manufacturing power and motive-power on the one side, and 9,000,000 horse-power in water-power maximum development and a widening of markets both at home and in the Orient, California can face its industrial future with confidence.

California Hydro-Electric Plants in Operation

(On December 31, 1915.)

Company	No. of plants	Date of first Installation	Total installed capacity KVA
California-Oregon Power Co.....	7	1903	10,650
Pacific Gas & Electric Co.....	9	1895	89,450
Northern California Power Co., Consolidated.....	6	1901	36,150
Sierra & San Francisco Power Co.....	3	1898	37,375
Coast Valleys Gas & Electric Co.....			
Great Western Power Co.....	2	1908	53,300
Western States Gas & Electric Co.....	2	1903	6,000
Oro Electric Corporation.....	2	1906	3,000
Snow Mountain Water & Power Co.....	1	1908	6,000
Coast Counties Gas & Electric Co.....	1	1896	810
Tuolumne Electric Co.....	1	1908	600
Utica Gold Mining & Hobart Estate Co.'s.....	1	1898	1,500
Mariposa Mining & Commercial Co.....	1	1905	400
San Joaquin Light & Power Corp.....	4	1897	25,350
Mt. Whitney Power & Electric Co.....	4	1899	9,350
Yosemite Power Co.....	1	1906	900
Pacific Light & Power Corp.....	8	1898	84,350
Southern California Edison Co.....	7	1893	28,500
Ontario Power Co.....	1	1902	750
Holton Power Co.....	2	1906	1,300
Los Angeles Aqueduct Power.....	3	1908	2,220
Sierra Pacific Electric Co.....	5	1899	9,200
Nevada-California Power Co.....	5	1905	22,250
Southern Sierras Power Co.....			
Pacific Power Co.....	1	1905	3,000

Total Mean Annual Flow of California Streams in Acre-Feet

(Data supplied by U. S. Geological Survey, from Supply Papers and unpublished records.)

Name of stream	Station	Years of record	Run-off in acre-feet
Sacramento River.....	near Red Bluff.....	18	9,770,000
Pit River.....	near Bieber.....	4	589,000
McCloud River.....	near Gregory.....	5	1,840,000
Stony Creek.....	near Fruto.....	11	549,000
Feather River.....	at Oroville.....	10	5,880,000
Yuba River.....	near Smartsville.....	9	3,050,000
Bear River.....	at Van Trent.....	9	364,000
American River.....	at Fair Oaks.....	7	3,820,000
Cache Creek.....	at Yolo.....	10	569,000
San Joaquin River.....	near Friant.....	6	1,930,000
Kern River.....	near Bakersfield.....	18	724,000
Tule River.....	near Portersville.....	11	137,000
Kaweah River.....	near Three Rivers.....	9	506,000
Kings River.....	near Sanger.....	18	1,940,000
Merced River.....	near Merced Falls.....	11	1,250,000
Tuolumne River.....	near LaGrange.....	18	2,070,000
Stanislaus River.....	at Knights Ferry.....	10	1,540,000
Calaveras River.....	at Jenny Lind.....	4	351,000
Mokelumne River.....	near Clements.....	8	988,000
Cosumnes River.....	at Michigan Bar.....	6	398,000
Truckee River.....	at Nev.-Cal. State Line.....	13	798,000
West Fork Carson River.....	at Woodfords.....	11	121,000
East Fork Carson River.....	near Gardnerville, Nevada.....	6	335,000
West Walker River.....	near Coleville.....	6	293,000
Owens River.....	near Lone Pine.....	4	305,000
Sweetwater River.....	near Descanso.....	6	7,900
Santa Ysabel Creek.....	near Escondido.....	5	28,800
Santa Ana River*	near Mentone.....	10	75,500
San Gabriel River*	near Azusa.....	17	112,000
Arroyo Seco.....	near Soledad.....	11	147,000
Colorado River.....	at Yuma, Arizona.....	11	16,900,000
Link River.....	at Klamath Falls, Ore.....	9	1,700,000

*Includes canals.

NATIONAL FORESTS IN CALIFORNIA

California contains eighteen National Forests, comprising a total area of about 19,508,000 acres (National Forests are distinct from National Parks) according to U. S. District Forester DuBois, who is charged with the administration of the National Forests in this State. In these forests stand about 109,000,000,000 feet of timber, principally pine, fir, and cedar, having an estimated value of \$225,000,000. About 60,000,000 feet of this timber is cut annually to fill the normal demand. Much of the public forest is at present inaccessible and will come on the market naturally with the increase in California's population and the more intensive development of her resources.

In the fiscal year ending 1916, 193,668 head of cattle and horses and 417,050 head of goats and sheep foraged within these forests. Permits for other uses to a total of 1958, such as apiaries, corrals, restaurants, pipe lines, etc., and summer home, permanent camp and resort sites, which are leased by the Forest Service for long periods at nominal sums, produced a revenue of \$21,173.

Within the forests, hydro-electric plants, entirely or partly on forest lands, had a total installed capacity of 272,420 horsepower, and permits had been issued for these and other sites which, it was estimated, would produce 470,000 continuous horse power under low water conditions.

FOREST PROTECTION

Over \$800,000 is spent annually in administering and protecting these forests. During the fiscal year ending June 30, 1916, permanent improvements, including 237 miles of trails and 361 miles of telephone lines were built at a cost of \$116,709. The Government Forest systems now aggregate 3,503 miles of trails and 4,368 miles of telephone lines.

Each National Forest is under the immediate control of a Forest Supervisor. For purposes of administration and protection, the forests are divided into ranger districts, each in charge of a District Ranger. Under the District Rangers are the protection forces—lookouts, patrolmen, and Forest firemen. The lookouts, stationed upon high peaks, report fires to the District Ranger by telephone or heliograph.

Rangers, patrolmen, and firemen employed by the Forest Service in California during the summer of 1916 totaled 436, with fire detection service performed by 85 lookout men. In addition about 800 men—mountaineers, miners, and lumbermen—were registered with the Forest Service as volunteers to be called out in emergencies. Eighty-nine patrolmen, paid by private owners of timber within the forest, worked under the supervision of and in cooperation with the Forest Service. During the fiscal year of 1916, about \$40,000 was contributed by railroads, lumber companies, municipal organizations, counties and private citizens for fire protection, and spent through cooperative agreements with the Forest Service on 4,000,000 acres of timber land and valuable watersheds.

Although in 1916, a season of great fire hazard, a total of 1,387 fires was reported and extinguished, the damage done within the National Forests of the State was but \$27,548, a sum less than the average for previous years.

Lumber Cut in California for Years from 1890 to 1916

(1916 figures 'Pioneer Western Lumberman')

	Feet		Feet
1890.....	515,823,000	1910.....	1,254,826,000
1900.....	734,232,000	1911.....	1,207,000,000
1905.....	1,077,499,000	1912.....	1,203,059,000
1906.....	1,348,599,000	1913.....	1,183,380,000
1907.....	1,345,943,000	1914.....	1,185,000,000
1908.....	966,115,000	1915.....	1,002,000,000
1909.....	1,144,000,000	1916.....	1,451,541,000

Kinds of Lumber Cut in California

(1916 figures "Pioneer Western Lumberman.")

Kinds	1910 Feet	1914 Feet	1915 Feet	1916 Feet
Redwood.....	600,000,000	425,000,000	418,824,000	490,828,000
Western pine or white.....	350,000,000	450,000,000	389,637,000	494,973,000
Douglas fir.....	110,000,000	50,000,000	117,680,000	141,200,000
Sugar pine.....	100,000,000	150,000,000	114,494,000	165,461,000
White fir.....	60,000,000	75,000,000	50,720,000	85,918,000
Spruce.....	30,000,000	10,000,000	9,447,000	
Cedar.....	15,000,000	20,000,000	12,185,000	16,587,000
Western hemlock.....	1,000,000	1,000,000	4,537,000	
Oak.....	1,000,000	1,000,000	12,000	
Ash and other.....	3,000,000	3,000,000		
*Oak (imported).....			790,000	
*Birch (imported).....			120,000	
*Genisero (imported).....			5,000	
*Spanish Cedar (imported).....			52,000	
Eucalyptus (native).....			200,000	
Species undetermined.....				20,574,000
	1,270,000,000	1,185,000,000	1,118,703,000	1,415,541,000

*Logs imported and sawed in this State.

The annual timber output of the State is approximately 1,415,541,000 board feet, almost evenly divided between redwood and pine. In connection with the other Pacific States, it supplies about 20% of the raw material for the wood manufacturing industries of the nation.

Receipts of Lumber at San Francisco in 1916

Year	California	Ore. and Wash.	Rail	Total
1916	214,090,933	496,090,726	45,046,000	755,227,659
1915	226,044,000	504,519,000	14,186,000	744,749,000
1914	281,569,000	614,240,000	15,150,000	910,959,000
1913	303,872,000	721,154,000	20,885,000	1,045,911,000
1912	340,257,000	652,307,000	22,143,000	1,014,707,000
1911	324,251,000	634,251,000	.....	958,502,000
1910	332,499,000	675,145,000	.....	1,007,594,000
1909	324,913,000	651,469,000	.....	976,382,000
1908	298,780,000	582,524,000	.....	881,304,000

California Redwood

It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "clear lumber." The redwood (*Sequoia sempervirens*) is indigenous to California, and except for a few stunted trees in Japan is found in no other country. The trees of the *Sequoia* family are the oldest and largest known. The wood takes a distinct and beautiful finish, which makes it valuable for interior use of all kinds. Being free from resin, it is especially resistant to fires and decay, making it especially valuable for siding, shingles and wherever exposed to moisture.

The redwood belt extends from the California-Oregon line southerly along the coast about 240 miles, a narrow belt 10 to 30 miles wide; on the west is the Pacific Ocean and on the east the divide of the low Coast Range.

Annual Shipments of Redwood

The following figures furnished by the "Pioneer Western Lumberman," give the annual shipments of redwood from the California mills north of San Francisco bay:

	Feet		Feet
1901	244,386,075	1909	402,519,307
1902	262,597,015	1910	446,097,661
1903	301,343,953	1911	444,925,773
1904	324,676,960	1912	477,330,460
1905	347,679,159	1913	404,583,279
1906	409,702,576	1914	430,520,000
1907	437,514,653	1915	354,131,000
1908	356,549,880	1916	406,340,000

To the above cut should be added approximately 100,000,000 feet going into shingles, shakes, split ties, posts, pickets, etc., and at least 25,000,000 feet manufactured south of San Francisco.

The redwood is peculiarly the poor man's timber and with a few tools he can make a living while clearing his land. Owing to its straight grain and easy splitting qualities, expensive saw-mills and logging outfits are not necessary for putting the timber into marketable condition.

A falling axe, wedges and broad-axe enable the individual worker to fell and work the great trees into ties, posts, shakes, pickets and grape stakes, all of which products find a ready market at remunerative prices at the nearest shipping point.

Another product of the so-called redwood belt is the bark from tan oak, of which about 30,000 cords are peeled annually, with a value of from \$450,000 to \$600,000 at the shipping point.

California Pine

The Sierra Nevada Mountains are the home of the pine. The pine forests of California extend from Kern County 350 miles to the northern boundary of the State

in the Sierra Nevada Mountains, with an average width of perhaps twenty miles, and from Napa County to the northern boundary of the State on the eastern slope of the Coast Range. There are also small areas in the San Bernardino Mountains.

The total area of merchantable pine timber is approximately 8,000 square miles. The most valuable trees are the sugar pine (*Pinus lambertiana*), the white pine (*Pinus ponderosa*) and the Jeffrey pine. Other valuable trees which occur in these forests are Douglas fir, white fir, spruce, cedar and Western hemlock.

The woods from these trees are meeting with a steadily increasing demand in the wood manufacturing industries of this country and the entire world. They are unsurpassed for doors, sashes, interior finish, flooring, ceiling, patterns, piano key boards, lead pencils and for many other purposes where strength, durability, stability, ease in working and beauty of finish are required.

There are many great plants in all parts of the State. The great railroad lines carry their product to every part of the United States. The work of lumbering is practically the same as in the redwood districts, steam machinery as a rule getting the logs to the mills, although in some instances ox-teams are still used. Here, as in the redwood country, there are immense log ponds where the logs are stored away for the mills. The cut has run from 400,000,000 to 500,000,000 feet a year, in 1916 running over 700,000,000 feet.

Federal aid has been asked in the effort to quarantine the forests of white and sugar pine from a disease known as rust blister now prevalent in Europe. This is of especial interest to California where there are over three million acres of the most valuable sugar pine on the Pacific Coast.

According to the official and most reliable lumber authorities, there are about 248 saw-mills, cutting not less than 50,000 feet yearly, scattered through the timber sections of the State. These saw-mills employ over 25,000 men, and pay over \$16,000,000 in wages. They expend over \$18,000,000 for materials, \$6,000,000 for supplies, and \$2,000,000 for taxes.

The total value of the products was \$45,000,000, which was nearly 50 per cent greater than the output of the canning and preserving industry, the next greatest manufacturing industry.

FISHERIES

Both the interior and the coastal waters of California abound in food and game fish, offering inducements both to the pleasure-seeker and the profit-earner.

There are about 165 species of cold-water fauna whose proper home is north of Point Concepcion, and 117 species of semi-tropical fauna found south of Point Concepcion, beyond the reach of the cold currents of the north.

Of these, 133 varieties of food fish are found in the San Francisco markets, including oysters and shell fish.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento basin. Through the work of the Federal and State Commissions, however, the rivers have been re-stocked and now there are more salmon in the Sacramento River than ever before, but they are mostly marketed as fish.

The following is a list of the twelve State hatcheries, with the amount of salmon and trout fry hatched at each for the year 1916, as reported by the Fish and Game Commission:

Hatchery	Amount	Specie
Mt. Shasta.....	18,383,000	Quinnat salmon fry.
Mt. Shasta.....	9,477,500	Trout fry.
Tahoe.....	3,023,000	" "
Ukiah.....	490,000	" "
Ukiah.....	956,000	Quinnat salmon fry.
Fort Seward.....	1,151,000	Trout fry.
Brookdale.....	881,000	" "
Yuba City.....	872,000	Shad fry
Bear Valley.....	750,000	Trout fry.
Almanor.....	301,000	" "
Snow Mountain.....	184,000	" "
Marlette Carson.....	55,000	" "
Total.....	36,523,000	

The Mt. Shasta hatchery produces more salmon and trout fry than any similar hatchery in the world.

There are four hatcheries and egg collection stations in the State under Federal supervision, as follows:

Battle Creek, Tehama County.
 Mill Creek, Tehama County.
 Klamath River, Siskiyou County.
 McCloud River, Shasta County.

Pacific Coast Fishing Industry

Extent of Industry	California
Value of output.....	\$8,375,000.00
Capital employed.....	10,000,000.00
Earnings of labor employed.....	3,500,000.00
Number of persons employed.....	9,000

The Alaska Packers Association maintains two large hatcheries in Alaska, and in 1916, 49,003,008 salmon fry were liberated.

Besides the home fisheries, there are employed in packing salmon in Alaska waters and Puget Sound, over fifty San Francisco vessels, many men and a large amount of California capital. The following table shows California's share of the industry, which is very large:

Value of salmon pack for 1916 is approximately \$8,375,000.00.

Canned salmon and other fisheries products are sent by sea from San Francisco to nearly every country in the world. The shipments of canned salmon alone for 1916 had a total value of \$3,900,000.00.

The Alaska Packers Association report their pack for 1915 as 1,024,040 cases.

The California Salmon Packing Companies report their pack for 1915 as 1,179,349 cases.

The California sardine pack during the year 1916, valued at \$1,200,000 shows the phenomenal increase of 200,000 cases over last year's pack, making the total output 250,000 cases. The California sardine is now finding a ready market not only in the United States but in foreign lands.

According to the "Western Canner and Packer" the tuna pack for the season 1916 was a little under 367,000 cases, with an approximate value of \$2,400,000, this being a slight increase over the pack of 1915. Several tuna packing companies have enlarged their plants and increased their industry. Demand for this fish has outlived the supply; packers have practically no stock on hand. The tuna is found off the coast of Southern California and most packers agree that the supply is not only limited but uncertain.

MOTOR VEHICLE REGISTRATION AND RECEIPTS FOR 1916

Reports from the State Motor Vehicle Department up to and including February 5, 1917, including registrations for motor vehicles, etc., and money received therefrom, is shown in the following table:

	Registrations	Receipts
Automobiles.....	183,848	\$1,857,070.77
Motorcycles.....	12,937	25,394.72
Chauffeurs.....	7,752	8,369.50
Automobile dealers.....	1,649	32,988.00
Motorcycle dealers.....	102	512.00
Miscellaneous.....		1,085.00
Total.....	206,288	\$1,925,419.99

The registration for automobiles shows an increase of 20,048 over 1915.

THE MINERAL INDUSTRY

The following table shows the comparative values of the several minerals produced in California during the year 1915 and 1916:

Substance	1915	1916*
Antimony.....	\$ 35,666	\$ 25,000
Asbestos.....	2,860	5,000
Barytes.....	620	10,000
Bituminous rock.....	61,468	60,000
Borax.....	1,663,521	1,670,000
Brick.....	1,678,756	1,600,000
Cement.....	6,044,950	6,100,000
Chromite.....	38,044	200,000
Clay—pottery.....	133,724	135,000
Coal.....	26,662	25,000
Copper.....	7,169,567	17,000,000
Dolomite.....	14,504	15,000
Feldspar.....	9,000	7,000
Fuller's earth.....	4,002	4,000
Gems.....	3,565	3,600
Gold.....	22,442,296	22,500,000
Gypsum.....	48,953	45,000
Infusorial earth.....	62,000	60,000
Iron ore.....	2,584	3,000
Lead.....	225,426	1,000,000
Lime.....	286,304	285,000
Limestone.....	156,288	155,000
Lithia.....	1,365	500
Magnesite.....	283,461	800,000
Manganese ore.....	49,098	200,000
Marble.....	41,518	40,000
Mineral paint.....	1,756	1,800
Mineral water.....	467,738	470,000
Natural gas.....	1,706,480	1,800,000
Petroleum.....	43,503,837	49,000,000
Platinum.....	21,149	25,000
Potash.....	19,391	25,000
Pumice.....	6,400	6,500
Pyrite.....	293,148	295,000
Quicksilver.....	1,157,449	2,500,000
Salt.....	368,737	350,000
Sandstone.....	8,438	8,000
Silica (sand and quartz).....	34,322	35,000
Silver.....	851,129	1,400,000
Slate.....	5,000	1,000
Soapstone and talc.....	14,750	15,000
Soda.....	83,485	85,000
Stone, miscellaneous.....	5,011,108	5,100,000
Tungsten concentrates.....	1,005,467	4,000,000
Zinc.....	1,617,383	2,000,000
Totals.....	\$96,663,369	\$119,065,400

*Estimated.

PETROLEUM IN CALIFORNIA

As will be seen from the foregoing tabulation, the petroleum output shows an increase from over \$43,000,000 in 1915 to approximately \$49,000,000 in 1916. The State Mining Bureau attributes this to a number of causes. Production did not keep pace with the demand. New developments were curtailed because of the Federal Government's suits in the Kern County fields. The yield during 1916 increased approximately 2,000,000 barrels, and the price per barrel averaged about 10% more than in 1915. The producing wells increased to 7,333 in number. The amount of oil in storage decreased from 57,147,051 barrels in January to 44,036,190 barrels in December, which showed the heaviest decline in stocks since 1907.

In the following table the California figures are supplied by the State Mining Bureau, while the production of the United States is taken from the report of the United States Geological Survey:

Year	California (barrels)	United States (barrels)	Year	California (barrels)	United States (barrels)
1900.....	4,329,950	63,620,529	1908.....	48,306,910	178,527,355
1901.....	7,710,315	69,389,194	1909.....	58,191,723	183,170,874
1902.....	14,356,910	88,766,916	1910.....	77,697,568	209,556,048
1903.....	24,340,839	100,461,337	1911.....	84,648,157	217,000,000
1904.....	29,736,003	117,080,960	1912.....	89,689,250	222,935,044
1905.....	34,275,701	134,717,580	1913.....	98,494,532	248,446,230
1906.....	32,624,000	126,493,936	1914.....	102,881,907	265,762,535
1907.....	40,311,171	166,095,335	1915.....	91,146,820	281,104,104
			1916 (est.).....	93,000,000	292,300,000

The following table, prepared by the United States Geological Survey shows the marketed production of petroleum in 1915, and an estimate of the corresponding production in 1916 in the ten principal producing States:

State	Production by barrels	
	1915	1916
Oklahoma.....	97,915,243	105,000,000
California.....	86,591,535	89,000,000
Texas.....	17,467,598	26,000,000
Illinois.....	19,041,695	16,500,000
Louisiana.....	18,191,539	15,800,000
West Virginia.....	9,264,798	8,500,000
Pennsylvania.....	7,838,705	8,000,000
Ohio.....	7,825,326	7,400,000
Kansas.....	2,823,487	6,500,000
Wyoming-Montana.....	4,245,525	6,300,000

The following figures are supplied by the State Mining Bureau:

Total production for the United States.....	1913	248,446,230 barrels
Total production for the United States.....	1914	265,762,535 barrels
Total value for the United States.....	1913	\$237,121,388
Total value for the United States.....	1914	214,125,215

The Latest Figures Furnished by the California State Mining Bureau on the Production of Oil by Counties

The present extent of proved oil lands in California as determined by the State Mining Bureau and the most detailed information ever given on the subject, is 126 square miles, or 80,702 acres, of which Kern County alone has 55,842 acres. Fresno County is second on the list with 12,218 acres, and Santa Barbara County third with 6,030 acres. It is worthy of notice that the total area of proved oil land is most insignificant in comparison with the area of the entire State, being less than one-thousandth part, and yet the oil business is one of the State's most important industries.

In the following tables the 1915 figures were taken from the Mining and Oil Bulletin of Los Angeles, while the 1916 figures were taken from the Standard Oil Bulletin:

Production by Fields

Field	1915 Bbls.	1916 Bbls.	Inc. + Dec. -
Kern River.....	8,094,673	8,402,525	307,852+
McKittrick.....	3,585,899	3,230,644	355,255-
Midway-Sunset.....	39,621,003	38,925,476	695,527-
Lost Hills-Bellridge.....	4,310,476	4,852,431	541,955+
Coalinga.....	13,567,380	14,381,493	814,113+
Santa Maria-Lompoc.....	4,493,575	4,422,410	71,165-
Ventura Co.-Newhall.....	1,028,106	1,122,033	93,927+
Los Angeles-Salt Lake.....	2,094,194	1,721,453	372,741-
Whittier-Fullerton.....	12,874,670	14,679,672	1,805,002+
Summerland.....	55,800	56,775	975+
Watsonville.....	.....	27,450	.....
Total.....	89,725,776	91,822,362	2,096,586+

RAILWAYS IN CALIFORNIA

There have been very few changes in the mileage for 1916 as compared with 1915. At the present time there are six roads under construction as follows:

Colusa & Hamilton Railroad.	Patterson & Western Railroad.
Hueneme, Malibu & Southern.	Indian Valley Railroad.
Mojave Northern Railroad.	Panoche Railroad.

None of these companies have reported mileage for year ending June 30, 1916, except the Mojave Northern. The report of that company indicates that there was construction to and including June 30, 1916, of 5 5/10 miles. This mileage, of course, is not included in the operating table given below:

Work on the San Diego and Arizona Railway is being rushed to completion and trans-continental freight service will be established by the end of the year. This road, 138.06 miles long, has the lowest grade of any line entering California and will shorten the distance from Chicago to the Pacific Coast by 140 miles.

Steam Roads

Operating mileage for the year ending June 30, 1916.

Name of road	Mileage
Southern Pacific Co.....	6,313.14
Atchison, Topeka & Santa Fe Railway Co.....	2,253.98
Northwestern Pacific Railroad Co.....	664.06
San Pedro, Los Angeles & Salt Lake Railroad Co.....	585.87
Western Pacific Railway Co.....	500.07
Nevada-California-Oregon Railway.....	244.17
Tonopah & Tidewater Railroad Co.....	147.96
Pacific Coast Railway Co.....	116.67
Sunset Railway Co.....	111.18
McCloud River Railway Co.....	106.55
Thirty-nine other roads in California.....	1,101.80
Total.....	12,145.35

Electric Railways

Name of road	Mileage
Pacific Electric Railway Co.....	1,059.50
Los Angeles Railway Corporation.....	391.58
United Railroads of San Francisco.....	286.02
San Francisco-Oakland Terminals.....	262.84
Northern Electric Railway Co.....	165.56
Oakland, Antioch & Eastern Railway.....	134.77
Central California Traction Co.....	76.70
Peninsular Railway Co.....	80.39
San Diego Electric Railway Co.....	71.71
Visalia Electric Railroad Co.....	49.11
San Francisco, Napa & Calistoga Railway.....	44.52
Petaluma & Santa Rosa Railway Co.....	44.07
Twenty-three other roads in California.....	365.38
Total.....	3,032.15

SUMMARY OF VALUES

Orchard products:		
Fresh deciduous fruits, including apples.....	\$28,000,000	
Citrus fruits.....	40,000,000	
Dried fruits, not including prunes or raisins.....	11,000,000	
Prunes.....	8,000,000	
Canned fruits and vegetables.....	20,000,000	
Olives and olive oil.....	3,500,000	
Nuts.....	5,000,000	
		\$115,500,000
Vineyard products:		
Table grapes.....	\$11,000,000	
Raisins.....	15,000,000	
Wine and brandy.....	14,500,000	
		40,500,000
Garden products, fresh.....	\$12,000,000	12,000,000
Dairy and poultry products:		
Dairy products.....	\$40,310,105	
Poultry products.....	20,000,000	
Honey, wax, etc.....	1,200,000	
		61,510,105
Farm products:		
Barley.....	\$31,654,000	
Wheat.....	8,512,000	
Oats.....	4,680,000	
Corn, rye.....	2,661,000	
Rice.....	3,544,000	
		51,051,000
Farm products (continued):		
Hay and forage.....	\$55,125,000	
Hops.....	3,000,000	
Sugar beets.....	25,000,000	
		83,125,000
Other field crops:		
Potatoes.....	\$14,805,000	
Potatoes, sweet.....	960,000	
Beans.....	20,875,000	
Onions.....	4,000,000	
Seeds and sundry others.....	3,000,000	
Melons.....	4,000,000	
Cotton.....	750,000	
		48,390,000
Fish industry:		
Coast and interior (tuna and sardines).....	\$3,600,000	
Salmon fisheries, etc.....	8,375,000	
		11,975,000
Forest and lumber products.....	\$30,000,000	30,000,000
Mineral products:		
Gold.....	\$22,500,000	
Cement.....	7,240,000	
Copper.....	17,000,000	
Petroleum.....	49,000,000	
Other minerals.....	28,244,000	
		123,984,000
Farm animals and their products (other than dairy):		
Production of wool on farms.....	\$2,200,000	
Live stock.....	37,000,000	
		39,200,000
Nursery and florist products.....	\$ 5,000,000	5,000,000
Cider, vinegar, etc.....	2,500,000	2,500,000
Total.....		\$624,735,105
According to the best information from manufacturers themselves, there has been about a 20% increase in manufacturing in California since the Federal census was taken in 1910.		
The manufactures in 1910 were valued at.....	\$529,761,000	
Add 20 per cent.....	105,952,200	
Manufactures, 1916.....	\$635,713,200	635,713,200
Grand total.....		\$1,260,448,305

NOTE.—Considerable difficulty has been experienced in gathering statistics regarding values but the above is based on conservative estimates from reliable sources.

THE CALIFORNIA DEVELOPMENT BOARD

A Consolidation of
THE CALIFORNIA STATE BOARD OF TRADE
THE MANUFACTURERS AND PRODUCERS ASSOCIATION OF CALIFORNIA
THE CALIFORNIA PROMOTION COMMITTEE
Ferry Building, San Francisco

OFFICERS

Wm. J. Dutton.....	President
A. B. C. Dohrmann.....	Vice-President
Robert Newton Lynch.....	Vice-President and Manager
W. D. Egilbert.....	Secretary
Wells Fargo Nevada National Bank.....	Depository

EXECUTIVE COMMITTEE

William J. Dutton.....	Insurance Exchange Bldg., San Francisco
A. B. C. Dohrmann.....	Stockton and Geary Streets, San Francisco
Robert Newton Lynch.....	Ferry Building, San Francisco
N. P. Chipman.....	California Appellate Court, Sacramento
James Irvine.....	Crocker Building, San Francisco
B. F. Walton.....	8 Nineteenth Street, Sacramento
John P. Irish.....	1904 Adeline Street, Oakland
Thomas Maclay.....	Petaluma, California
Chester H. Rowell.....	Fresno, California
Frederick J. Koester.....	22nd and Illinois Streets, San Francisco
R. B. Hale.....	5th and Market Streets, San Francisco
James B. Bullitt.....	Anaotok Ranch, San Jose, California
R. W. Pridham.....	112 Center Street, Los Angeles
John S. Mitchell.....	Hotel Hollenbeck, Los Angeles
Milton Esberg.....	M. A. Gunst Co., California and Front Streets, San Francisco

ACTIVE MEMBERS

COUNTY REPRESENTATIVES

Alameda.....	Theo. Gier, 581 Eighteenth Street, Oakland	Modoc.....	D. P. Talbott, Salinas
Butte.....		Monterey.....	James H. Devine, Sacramento
Colusa.....		Sacramento.....	H. H. Whitmore, Hollister
Contra Costa.....	Frank T. Swett, Martinez	San Benito.....	W. M. Irwin, San Diego
Del Norte.....		San Diego.....	James Y. Coates, Stockton
Warren Tryon, 519 Merchants Nat'l Bank, San Francisco		San Joaquin.....	Frank L. Ekward, San Mateo
El Dorado.....	Supervisor J. B. Johnson, Fresno	San Mateo.....	Jos. T. Brooks, San Jose
Fresno.....	Mack C. Coats, Ferry Bldg., San Francisco	Santa Clara.....	C. Fred Smith, Redding
Glenn.....	Wm. S. Clark, Eureka	Shasta.....	Thomas Smith, Vallejo
Humboldt.....	Thos. F. Burke, Bakersfield	Solano.....	Thomas Maclay, Petaluma
Kern.....	A. G. Robinson, Hanford	Sonoma.....	Geo. T. McCabe, Modesto
Kings.....	Nathan Bieber, 584 Tenth Avenue, San Francisco	Stanislaus.....	Mack C. Coats, Ferry Bldg., San Francisco
Lassen.....	Supervisor John J. Hamilton, Los Angeles	Sutter.....	N. P. Chipman, Sacramento
Los Angeles.....	Walter C. Maloy, Madera	Tehama.....	Arthur E. Miot, Visalia
Madera.....		Tulare.....	
Mendocino.....		Yolo.....	
Merced.....	O. W. Lehmer, Merced	Yuba.....	Mack C. Coats, Ferry Bldg., San Francisco

INDIVIDUALS, FIRMS AND CORPORATIONS—REPRESENTATIVES

Anglo & London Paris National Bank.....	C. F. Hunt, Sansome and Sutter Streets
Balfour, Guthrie & Company.....	350 California Street
Bank of California National Association.....	Chas. K. McIntosh, California and Sansome Streets
Brewers' Protective Association.....	J. A. Hieronimus, care Union Brewing and Malting Co., 18th and Florida Streets
Brandenstein, M. J., & Co.....	3rd and Townsend Streets
Britton, John A.....	445 Sutter Street
California & Hawaiian Sugar Refining Co.....	230 California Street
California Barrel Company.....	Fred. J. Koester, 22nd and Illinois Streets
California Packing Corp., successors to California Fruit Cannery Association.....	120 Market Street
California Pine Box and Lumber Company.....	G. X. Wendling, Flood Building
Canadian Bank of Commerce.....	450 California Street
Commercial Union Assurance Company.....	558 Sacramento Street
Crocker National Bank.....	J. B. McCargar, Crocker Building
Emporium, The.....	Wm. Kaufmann, Market near 4th Street
Fireman's Fund Insurance Company.....	Wm. J. Dutton, Insurance Exchange Building
First National Bank of Los Angeles.....	Los Angeles
First National Bank of San Francisco.....	C. H. McCormick, Montgomery and Post Streets
Fuller, W. P., & Company.....	F. W. Fuller, 301 Mission Street
German Savings and Loan Society, The.....	Geo. Tourney, 526 California Street
Goodyear Rubber Company.....	587 Market Street
Gunst, M. A., & Company.....	Milton Esberg, California and Front Streets
Hale Brothers, Inc.....	R. B. Hale, Market and Fifth Streets
Hallman, Jr., I. W.....	Union Trust Co. of San Francisco, Grant Avenue and Market Streets
Hibernia Savings and Loan Society, The.....	R. M. Tobin, Jones and McAllister Streets
Hooper, C. A., & Company.....	Balboa Building
Hotel St. Francis.....	James Woods, Geary and Powell Streets
Matson Navigation Company.....	268 Market Street
Mercantile National Bank of San Francisco.....	W. F. Berry, 424 California Street
Miller & Lux, Inc.....	Merchants Exchange Building
Mission Bank, The.....	16th and Julian Avenue
Moore, Walton N., Dry Goods Company, successors to Moore-Watson Dry Goods Company.....	7-33 Front Street
Nathan-Dohrmann Company.....	A. B. C. Dohrmann, Geary and Stockton Streets
Pacific Gas & Electric Company.....	L. F. Walsh, 445 Sutter Street

INDIVIDUALS, FIRMS AND CORPORATIONS—REPRESENTATIVES—Continued.

Palace Hotel.....	New Montgomery and Market Streets
Pope & Talbot.....	Foot of Third Street
Rollins, E. H., & Sons.....	D. H. Dibblee, First National Bank Building
San Joaquin Light & Power Corporation.....	A. G. Wisbon, H and Tulare Streets, Fresno
Savings Union Bank & Trust Company.....	John S. Drum, Grant Avenue and O'Farrell Streets
Schilling, A., & Company.....	2nd and Folsom Streets
Schmidt Lithograph Company.....	2nd and Bryant Streets
Shreve & Company.....	Shreve Building
Spreckels, J. D. and A. B., Securities Company.....	60 California Street
Standard Oil Company.....	W. S. Rheem, 461 Market Street
Tillmann and Bendel.....	Carl H. Schmidt, Pine and Davis Streets
Union Iron Works Company.....	20th and Minnesota Streets
Union Lumber Company.....	Crocker Building
Wellman-Peak & Company.....	311 Embarcadero
Wells Fargo Nevada National Bank.....	Col. J. P. Irish, Oakland
Western Meat Company.....	6th and Townsend Streets
Western Pipe & Steel Company.....	444 Market Street

HONORARY MEMBERS

William D. Stephens.....	Governor of California
John M. Perry.....	President, State Board of Agriculture, Stockton
Dr. Ray Lyman Wilbur.....	President Leland Stanford, Jr., University, Palo Alto
Benjamin Ide Wheeler.....	President University of California, Berkeley
Luther Burbank.....	Santa Rosa
G. H. Hecke.....	State Horticulturist, Sacramento
Judge N. P. Chipman.....	California Appellate Court, Sacramento
Colonel John P. Irish.....	Oakland
E. W. Maslin.....	San Francisco
F. McN. Hamilton.....	State Mineralogist, San Francisco
J. A. Filcher.....	San Francisco
J. N. Gillett (former President California Development Board).....	525 Market Street

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NOTE:—For the data and statistics used in this report, we are indebted to the following:

American Beet Sugar Company; Alaska Packers' Association; J. K. Armsby Company; Assessors and Commercial Organizations of various counties; Auditing and Freight Department of the Southern Pacific, Santa Fe and Western Pacific Railways; Board of Harbor Commissioners at San Francisco, Los Angeles, Eureka and San Diego; Board of Public Works of San Francisco; Building Inspectors of the principal cities of the State; G. A. Buell, Pioneer Western Lumberman; T. A. Burns; S. F. Fruit Distributors; California Almond Growers' Association; California Fruit Growers' Exchange; Horatio Stoll, California Grape Protective Association; California Packing Corporation; California Section U. S. Weather Bureau; California Swine Breeders' Association; California Walnut Growers' Association; Citrus Protective League; Coachella Valley Date Growers' Association; Collector of Port, San Francisco; J. A. Ellenwood; Geo. H. Croley, Federated Poultry Association; Fish and Game Commission; E. Clemens Horst; W. E. Packard, Imperial Valley Experiment Station; Lima Bean Growers' Association; O'Malley-Collins Company, Inc.; Pacific Fruit Express Company; Pacific Gas & Electric Company; Pacific Rice Growers' Association; Pacific Rural Press; Postmaster, San Francisco; G. Harold Powell; Redwood Statistical Bureau; M. C. Richter; Roeding Fig and Olive Company; Howard C. Rowley, publisher, California Fruit News; San Francisco and other Clearing Houses; San Francisco Chamber of Commerce; Santa Barbara Walnut Growers' Association; Standard Oil Company; State Board of Equalization; State Board of Viticultural Commissioners; State Commission Market; State Dairy Bureau; State Horticultural Commission; State Mining Bureau; State Printing Office; State Railroad Commission; State Statistician; State Superintendent of Banks; U. S. Census Reports; U. S. Customs Service, San Francisco and Los Angeles; U. S. Department of Agriculture; U. S. Geological Survey; University of California; Wells Fargo-Nevada National Bank; Western Canner and Packer; Professor E. J. Wickson; G. H. Willson; Wine and Spirit Review; and many growers, producers and others throughout the State.

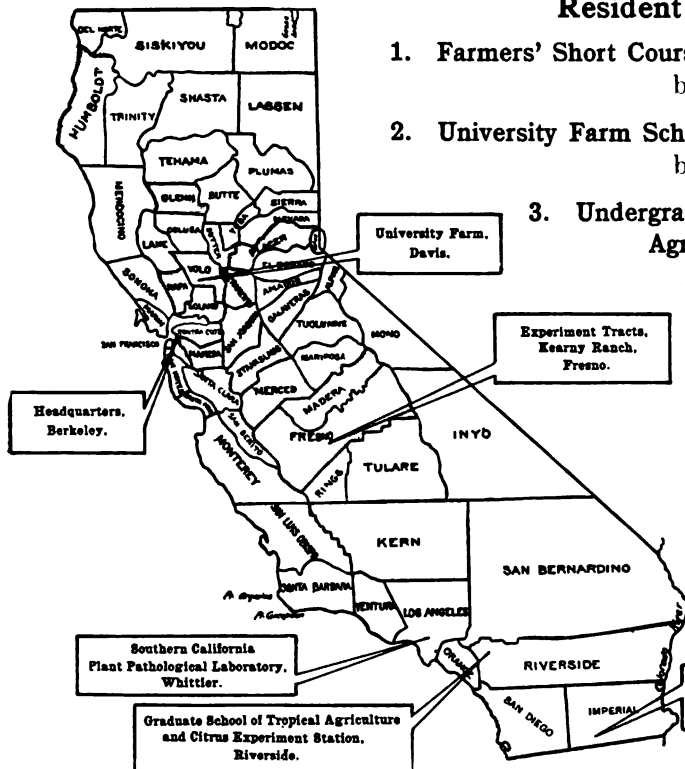
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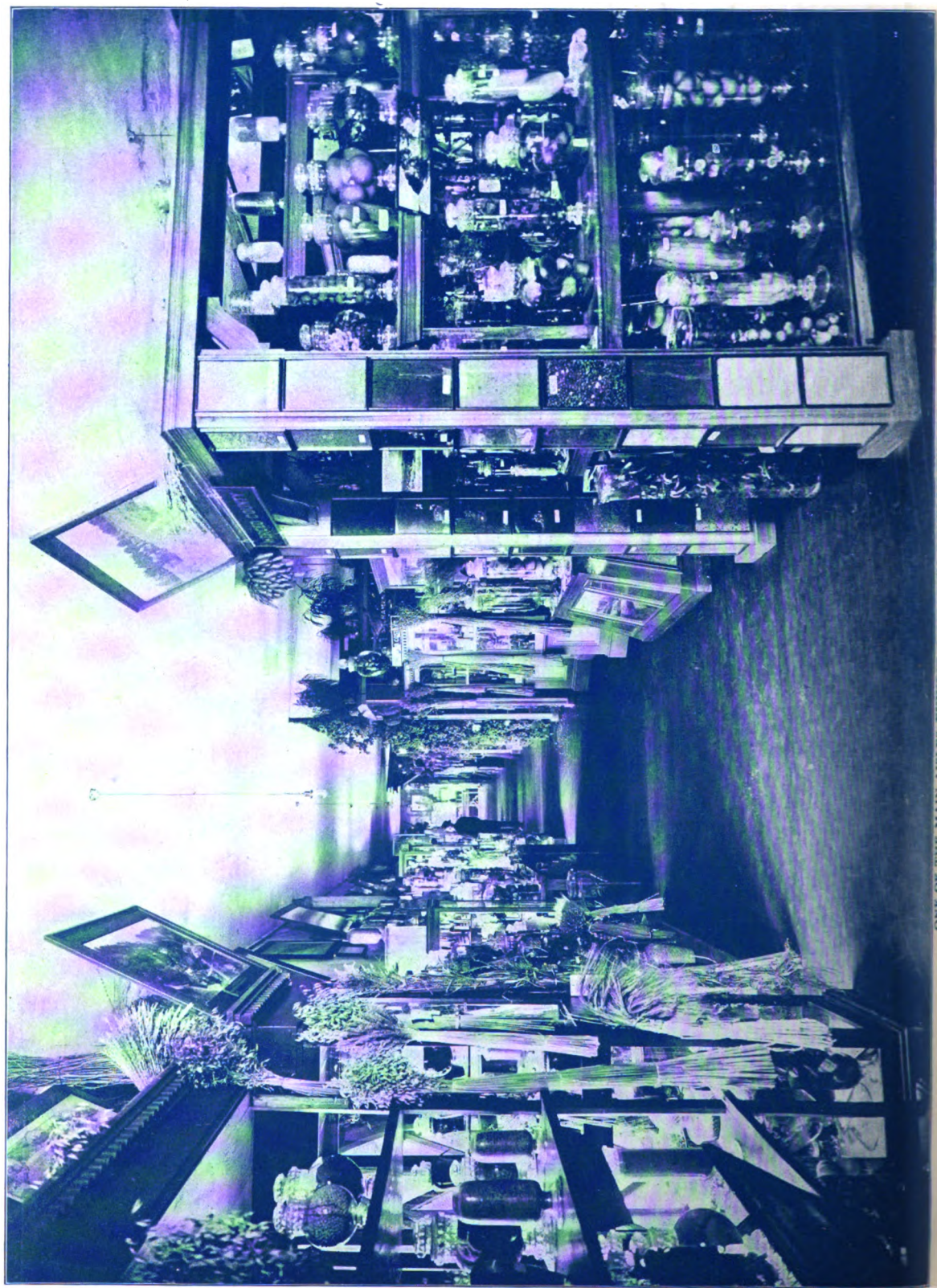


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RESOURCES AND POSSIBILITIES





ONE OF THE MAIN AISLES, EXHIBIT CALIFORNIA DEVELOPMENT BOARD

CALIFORNIA RESOURCES AND POSSIBILITIES

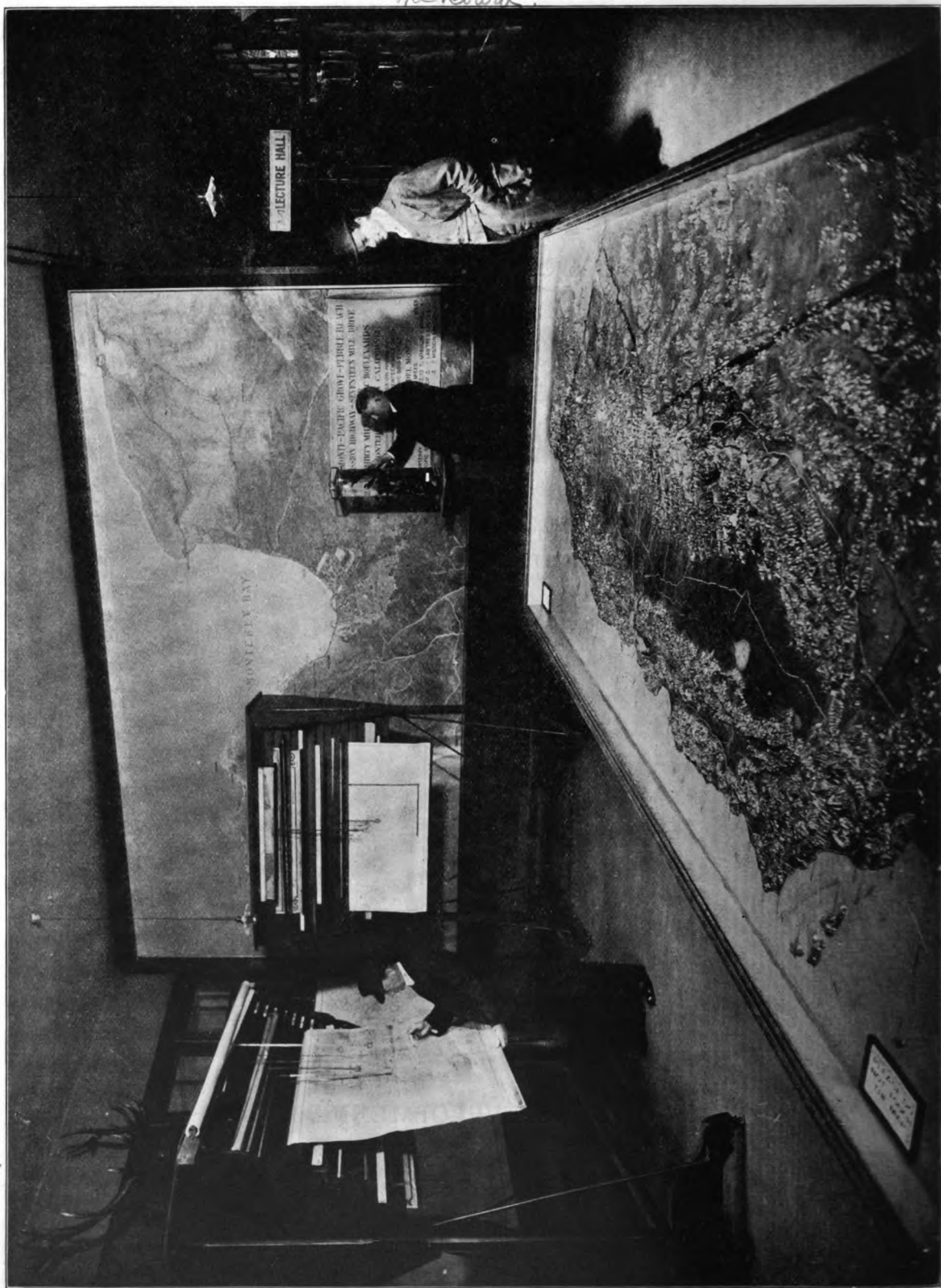
**TWENTY-EIGHTH
ANNUAL REPORT
OF THE
CALIFORNIA DEVELOPMENT BOARD
FOR THE
YEAR NINETEEN SEVENTEEN
SUBMITTED AS OF MAY
NINETEEN EIGHTEEN**



**CALIFORNIA DEVELOPMENT BOARD
OFFICE AND EXHIBITION HALL
UPPER FLOOR, FERRY BUILDING
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The Board



MAP ROOM. CALIFORNIA. HARVARD COLLEGE. BOSTON.



TWENTY-EIGHTH ANNUAL REPORT OF THE CALIFORNIA DEVELOPMENT BOARD

TO THE MEMBERS OF THE BOARD:

I have the honor to present herewith the Twenty-eighth Annual Statistical Report of the California Development Board. This report is the most complete up-to-date record of the progress and production of the State of California which is published, and is the result of painstaking work, following the closest contact with every section and interest in the State. It is as complete and accurate as is reasonable to expect considering that every authoritative resource has been drawn upon. Since this report is published in a very large edition for distribution all over the world, the following statement as to the character and activities of the Board seems pertinent:

An Executive Committee composed of fifteen gentlemen active in the public and commercial life of California direct the policies of the California Development Board. Its membership is made up of official representatives appointed by the Boards of Supervisors of thirty-four counties of the State, together with a representative from each active membership in the Board. Active members consist of persons and firms subscribing \$10 or more per month to our work. Helpful affiliation is sustained with all of the commercial organizations of the State and the Board cooperates closely with the Agricultural Department of the State University and with other official and public agencies. Correspondence from intending settlers and others received at the Governor's office, the State Department, the Commission of Immigration and Housing and other official bureaus is, as a rule, turned over to the Board for attention.

Speakers and experienced advice is furnished to commercial organizations desiring assistance in their work. A formal meeting of representatives of all the counties of the State is held at least once each year, at which State-wide problems are discussed. This brief sketch of our work is presented for the information of homeseekers, investors and inquirers to whose hand this statistical report may come.

Correspondence is solicited from all who are interested in California or who desire to locate commercial, manufacturing or agricultural enterprises. All inquiries will be answered impartially and the fullest information obtainable will be gladly furnished.

The Board has nothing to sell and does not represent any real estate or commercial enterprise. Its sole object in answering inquiries is to give such information as will enable homeseekers and investors to secure a thorough knowledge of the conditions in the localities in which they are interested.

Some Board Activities of the Year

Our Information Bureau at the Ferry Building has been conducted with efficiency, the average attendance at the desk approximating 300 daily, 60% of whom registered from outside the State. About 50% of these merely asked for county literature but the greater part of the balance have required specific information and personal attention. From two to four members of the staff have been constantly on duty in this department throughout the year.

By the addition of valuable bulletins from the various State commissions, the University of California, the Chambers of Commerce, the U. S. Department of Agriculture, and the segregation and classification of numerous clippings from the many farm magazines published throughout the State, the usefulness of the library has been increased.

Six newly revised county maps, several soil maps, additional topographic sheets and a weather chart have been added to the map file and the list of directories has been brought up to date.

The exhibit room has been thoroughly overhauled, the walls have been painted, the stands have been revarnished and the whole presents a most attractive appearance. In all there are thirty-four counties represented.

During the year the Union Pacific System installed in their Union Depot in Omaha an exhibit of agricultural products of the Western States, and the California Development Board was invited to prepare and ship a characteristic exhibit of the State. This material was gathered with the direct idea of making an impartial display of the resources of all sections and consisted of fruits, flowers, vegetables, cereals, fibres and minerals.

By far the most important work for the year has been that of gathering agricultural information on various counties; an agricultural expert has been in the field continuously and surveys have been made of Inyo, San Benito, Contra Costa, San Luis Obispo, Ventura and San Diego counties. Plans have been made to complete the whole northern section of the State during the coming season, and as soon as the roads are open, work will be done in Siskiyou, Modoc, Lassen and Trinity counties.

This survey work is having a decided tendency toward raising the standard of county booklets. Those most interested in the development of the State have come to realize that publications savoring of exaggeration are more harmful than any other medium of advertising, and several of the reports which the Board has made have been published and are being used in publicity work.

In October, 1917, the California Association of Practical Farmers became a committee of the California Development Board and Mr. E. E. Bowles of the Legislative Department of the San Francisco Chamber of Commerce was appointed to act as secretary of this committee.

This Committee gathered data which proved beyond question that there was not only a scarcity of farm labor in 1917, but that it would be greater in 1918. The consensus of opinion among farmers' organizations and others was to the effect that the only practical solution of the problem was the importation of Chinese farmers for the period of the war only, to be brought in under bond and deported on the proclamation of peace. The Executive Committee of the Board so recommended.

The Committee then took up the problem of increasing production. Sent out questionnaires to each of the six hundred odd township justices of the peace in the State and at the time this report is written had ascertained that there were over 600,000 acres adaptable to grains, beans and other cereals that would not be cultivated during 1918,

owing to the lack of financial ability of the farmers to provide themselves with equipment to take the place of man-power gone to war and to purchase seed at the prevailing rate. The Committee then concentrated on the plan of providing funds to finance the small farmer, the tenant and the mortgaged owner, upon which it is now engaged.

During the year there have been received and answered approximately 10,000 inquiry letters. In addition to these there were 2,500 special letters sent to members, 7,000 special letters to secretaries and directors and 35,000 printed letters, circulars and notices sent to various sources. Postage bill for the year 1917 amounted to \$1,184.98.

Twelve thousand copies of the Annual Report were distributed; 240,000 monthly bulletins were sent out in lots; 5,000 separate California maps; 4,000 copies Oakland, Berkeley, Alameda and San Francisco maps, and 175,000 pieces of literature distributed from the Information Desk. This literature consists of county booklets, miscellaneous leaflets, farm magazines, route books, mileage maps, etc.

There were 1,280 stereopticon lectures given on California counties, listened to by approximately 9,500. Inquiries were answered by lecturers to the number of 3,655 and 460 homeseekers were directed to various sections of the State. Of this number 27 bought homes. Number of acres bought or leased during the year through the direct efforts of the Lecture Bureau amounted to 1,460. The largest holding being 320 acres; the smallest $3\frac{1}{2}$ acres.

The total attendance for the year approximated 100,000. While this was a somewhat smaller attendance than in previous years the quality and interest has been unusually good.

Moving pictures have been run twice daily. Agricultural and scenic films being shown to about 6,000 persons during the year.

Three meetings were held during the year at Stockton, San Luis Obispo and Oakland respectively. A splendid delegation from the membership attended these gatherings and representatives of the Board have taken part in the activities of the various county agricultural societies by attending fairs, expositions, etc.

The finances of the Board are in good condition and there are no outstanding debts.

We wish to take this occasion to express our appreciation for the hearty cooperation of the Press throughout the State at all times, to our members, secretaries of organizations, government officials and all others who have in any way aided us in our activities.

The Annual Statistical Report covering the calendar year 1917 follows.

Respectfully submitted,

ROBERT NEWTON LYNCH.

ANNUAL STATISTICAL REPORT

Growth in Population and Development of California Since It Became a State

(U. S. Census Returns:)

Year	Population of State	Number of farms	Average acres per farm	Avg. value of land and build- ings per acre
1850.....	92,597	878	4,465.6	\$ 0.99
1860.....	379,994	18,716	466.4	5.58
1870.....	560,247	23,724	481.7	12.36
1880.....	864,694	35,934	461.8	15.79
1890.....	1,208,130	52,894	405.	32.53
1900.....	1,485,052	72,542	397.4	24.56
1910.....	2,377,549	88,197	316.7	51.93

Irrigation

Of the 88,197 farms in the State, 39,352 (46.6 per cent) were irrigated in 1909. The area reported as irrigated in 1909 was 2,664,104 acres, or 23.4 per cent of the improved land in farms. The area to which enterprises existing in 1910 were capable of supplying water was 3,619,378 acres, and the total acreage included in irrigation projects (completed or under way) in 1910 was 5,490,360 acres.

Population, Number of Farms and Farm Acreage

Census year	Population	Farms		Land in farms		Per cent of land area in farms	Per cent of farm land im- proved
		Number	Per cent of increase	Acres	Improved land (acres)		
1910.....	2,377,549	88,197	21.6	27,931,444	11,389,894	28.0	40.8
1900.....	1,485,053	72,542	37.1	28,828,951	11,958,837	28.9	41.5
1890.....	1,213,398	52,894	47.2	21,427,293	12,222,839	21.5	57.0
1880.....	864,694	35,934	51.5	16,593,742	10,669,698	16.7	64.3
1870.....	560,247	23,724	26.8	11,427,105	6,218,133	11.5	54.4
1860.....	379,994	18,716	2,046.3	8,730,034	2,468,034	8.8	28.3
1850.....	92,597	878	.....	3,893,985	32,454	3.9	0.8

Farm Operations in 1910

Color and nativity	Total		Owners	Tenants	Man- agers	Per cent of total		
	Number	Per cent distrib- ution				Owners	Tenants	Man- agers
Native white.....	58,926	66.8	45,780	10,505	2,641	77.7	17.8	4.5
Foreign-born white.....	26,193	29.7	19,914	5,565	714	76.0	21.2	2.7
Negro and other non- white.....	3,078	3.5	938	2,078	62	30.5	67.5	2.0
Total.....	88,197	100.0	66,632	18,148	3,417	75.5	20.6	3.9

Density of Population

In 1900, twenty states ranked ahead of California in population. In 1910, only eleven had that honor. In the ten-year period the Golden State has outstripped nine of them, taking twelfth place.

The density of the population is still but 15.2 persons to the square mile.

Population of California Counties

Counties	County Seat	Land area in Square Miles, 1910	Population 1910 U. S. Census	Per Cent of Increase 1900-10	Population Dec. 31, 1917 (Estimated)
Alameda.....	Oakland.....	732	246,131	89.0	400,000
Alpine.....	Markleeville.....	776	309	-39.3	351
Amador.....	Jackson City.....	601	9,086	-18.3	11,500
Butte.....	Oroville.....	1,722	27,301	59.5	43,000
Calaveras.....	San Andreas.....	1,027	9,171	-18.1	8,250
Colusa.....	Colusa.....	1,140	7,732	5.0	-7,882
Contra Costa.....	Martinez.....	714	31,674	75.5	70,000
Del Norte.....	Crescent City.....	1,024	2,417	0.4	3,500
El Dorado.....	Placerville.....	1,753	7,492	-16.6	7,500
Fresno.....	Fresno.....	5,950	75,657	99.8	100,000
Glenn.....	Willows.....	1,259	7,172	39.3	7,172
Humboldt.....	Eureka.....	3,634	33,857	24.9	45,000
Imperial.....	El Centro.....	4,089	13,591	.....	40,000
Inyo.....	Independence.....	10,019	6,974	59.3	-7,500
Kern.....	Bakersfield.....	8,003	37,715	128.9	54,073
Kings.....	Hanford.....	1,159	16,230	64.4	23,000
Lake.....	Lakeport.....	1,278	5,526	-8.2	5,000
Lassen.....	Susanville.....	4,531	4,802	6.5	10,000
Los Angeles.....	Los Angeles.....	4,067	504,131	196.0	*867,000
Madera.....	Madera.....	2,112	8,368	31.5	40,000
Marin.....	San Rafael.....	529	25,114	59.9	26,550
Mariposa.....	Mariposa.....	1,463	3,956	-16.2	v3,956
Mendocino.....	Ukiah.....	3,453	23,929	16.9	25,000
Merced.....	Merced.....	1,995	15,148	64.4	20,000
Modoc.....	Alturas.....	3,823	6,191	22.0	6,191
Mono.....	Bridgeport.....	3,030	2,042	5.8	2,100
Monterey.....	Salinas.....	3,330	24,146	24.6	-25,250
Napa.....	Napa.....	783	19,800	20.4	20,000
Nevada.....	Nevada City.....	974	14,955	-15.9	*14,955
Orange.....	Santa Ana.....	795	34,436	74.8	58,000
Placer.....	Auburn.....	1,395	18,237	15.5	*20,000
Plumas.....	Quincy.....	2,594	5,259	12.9	8,250
Riverside.....	Riverside.....	7,240	34,696	93.9	45,000
Sacramento.....	Sacramento.....	983	67,806	47.7	92,130
San Benito.....	Hollister.....	1,392	8,041	21.2	9,000
San Bernardino.....	San Bernardino.....	20,157	56,706	103.0	75,000
San Diego.....	San Diego.....	4,221	61,665	75.7	132,425
San Francisco.....	San Francisco.....	43	416,912	21.6	580,000
San Joaquin.....	Stockton.....	1,448	50,731	43.1	75,000
San Luis Obispo.....	San Luis Obispo.....	3,334	19,383	16.5	25,000
San Mateo.....	Redwood City.....	447	26,585	119.8	-35,000
Santa Barbara.....	Santa Barbara.....	2,740	27,738	46.5	36,320
Santa Clara.....	San Jose.....	1,328	83,539	38.7	*120,000
Santa Cruz.....	Santa Cruz.....	435	26,140	21.5	*30,000
Shasta.....	Redding.....	3,858	18,920	9.3	20,000
Sierra.....	Downieville.....	923	4,098	2.0	v4,098
Siskiyou.....	Yreka.....	6,256	18,800	10.8	22,000
Solano.....	Fairfield.....	822	27,559	14.1	37,500
Sonoma.....	Santa Rosa.....	1,577	48,394	25.8	v48,394
Stanislaus.....	Modesto.....	1,450	22,522	135.8	45,000
Sutter.....	Yuba City.....	608	6,328	7.5	*10,000
Tehama.....	Red Bluff.....	2,893	11,401	3.7	16,232
Trinity.....	Weaverville.....	3,166	3,301	-24.7	3,300
Tulare.....	Visalia.....	4,856	35,440	92.9	75,000
Tuolumne.....	Sonora.....	2,190	9,979	-10.6	*9,979
Ventura.....	Ventura.....	1,878	18,347	27.7	22,000
Yolo.....	Woodland.....	1,014	13,926	2.3	16,000
Yuba.....	Marysville.....	639	10,042	16.5	13,500
California.....	.....	155,652	2,377,549	60.1	3,578,858

Unless otherwise designated, population figures given on this page have been furnished by the Clerks of the County Boards of Supervisors and were estimates for January 1, 1918.

* Chamber of Commerce.

- 1914 estimate.

v 1910 census.

Principal Cities of California

This table gives the population of cities in California having a population of approximately 2,000 in 1910 and showing the rapid growth in the succeeding six years as estimated June 30, 1917.

Cities	Pop. Per 1910 Census	Estimated Pop. June 30, 1917
Alameda.....	23,383	30,000
Alhambra.....	5,021	10,120
Bakersfield.....	12,727	19,683
Berkeley.....	40,434	65,000
Chico.....	3,750	6,200
Daly City.....	.....	5,500
El Centro.....	1,610	6,000
Eureka.....	11,845	16,000
Fresno.....	24,892	45,000
Glendale.....	2,746	8,000
Grass Valley.....	4,520	5,466
Hanford.....	4,829	6,500
Hollywood.....	.....	25,000
Long Beach.....	17,809	48,000
Los Angeles.....	319,198	575,000
Marysville.....	5,430	6,000
Modesto.....	4,034	7,500
Monrovia.....	3,576	6,000
Monterey.....	4,923	5,000
Napa.....	5,791	6,500
Oakland.....	150,174	190,000
Ontario.....	4,274	7,000
Palo Alto.....	4,486	6,000
Pasadena.....	30,291	47,000
Petaluma.....	5,880	7,500
Pomona.....	10,207	15,000
Red Bluff.....	3,530	5,072
Redlands.....	10,449	12,000
Richmond.....	6,802	16,500
Riverside.....	15,212	19,000
Sacramento.....	44,696	76,000
Salinas.....	3,736	5,000
San Bernardino.....	12,779	18,000
San Diego.....	39,578	90,000
San Francisco.....	416,912	580,000
San Jose.....	28,946	50,000
San Leandro.....	3,471	5,000
San Luis Obispo.....	5,157	6,500
San Mateo.....	4,384	6,000
San Rafael.....	5,934	6,000
Santa Ana.....	8,429	15,000
Santa Barbara.....	11,659	17,000
Santa Clara.....	4,348	6,000
Santa Cruz.....	11,146	13,600
Santa Monica.....	7,847	30,000
Santa Rosa.....	7,817	11,000
South Pasadena.....	4,649	8,000
Stockton.....	23,253	42,000
Vallejo.....	11,340	15,500
Venice.....	3,219	10,000
Visalia.....	4,550	6,000
Watsonville.....	4,446	6,000
Whittier.....	4,550	6,200
Woodland.....	3,187	5,000

Summary of the State

	Population		Increase	Square miles	Population per square mile	
	1910	1900	Per Cent		1910	10 yr. inc.
Bay counties.....	925,708	658,156	40.6	7,108	130.2	37.6
South of Tehachapi.....	751,310	304,209	146.9	45,102	16.6	9.9
Sacramento Valley.....	153,708	114,656	34.6	10,280	14.9	3.8
San Joaquin Valley.....	261,811	143,179	80.2	27,176	9.7	4.4
Rest of State.....	285,012	264,853	7.6	66,506	4.2	.4
	2,377,549	1,458,053	60.1	156,172	15.2	5.7

This segregation shows that the greatest gain per square mile has been in the counties about San Francisco Bay, while the greatest aggregate gain and the greatest rate of increase has been south of the Tehachapi.

Of the two great interior valleys, the San Joaquin Valley has made the greatest aggregate gain, 118,632, and the greatest gain per cent, 80.2; while the Sacramento Valley made an aggregate gain of 39,042, and a gain per cent of 34.6.

The remaining counties of the State, twenty-five in number, show an aggregate gain of 20,159, and a net gain of 7.6 per cent.

Urban and City Population

Class of places	Population		Increase 1900 to 1910	
	1910	1900	Number	Per cent
The State.....	2,377,549	1,485,053	892,496	60.1
Urban territory.....	1,469,739	810,193	659,546	81.4
Cities and towns of—				
100,000 inhabitants or more.....	886,284	514,008	372,276	72.4
25,000 to 100,000 inhabitants.....	183,945	90,813	93,132	102.6
2,500 to 25,000 inhabitants.....	399,510	205,372	194,138	94.5
Remainder of the State.....	907,810	675,860	232,950	34.5

THE GAIN ON THE PACIFIC SLOPE

While the gain in population for the whole of the Continental United States, as shown by the Census of 1910, was 15,977,691, an increase of 21 per cent, the eleven States of the Pacific Slope, as given in the table below, show an aggregate increase of 2,734,567, an increase of 66.8 per cent.

The combined area is 1,175,742 square miles, which makes an average population per square mile of 5.8 persons, while the average population per square mile for the Continental United States is 30.9 persons.

Pacific Slope States

	Population		Increase	Square miles	Population per square mile	
	1910	1900	Per cent		1910	10 yr. inc.
Montana.....	376,053	243,329	54.5	145,310	2.6	.9
Wyoming.....	145,965	92,531	56.8	97,575	1.5	.6
Colorado.....	799,024	539,700	48	103,645	7.5	2.3
New Mexico.....	327,396	195,300	67.6	122,460	2.7	1.1
Arizona.....	204,354	122,931	66.2	112,920	1.8	.7
Utah.....	373,351	276,749	34.9	82,190	4.5	1.1
Nevada.....	81,875	42,335	93.4	109,740	.8	.4
Idaho.....	325,594	161,772	101.3	84,290	3.9	2.
Washington.....	1,141,990	518,103	120.4	66,880	17.	9.3
Oregon.....	672,765	413,536	62.7	94,560	7.1	2.7
California.....	2,377,549	1,485,053	60.1	156,172	15.2	2.7
Total.....	6,825,916	4,091,349	66.8	1,175,742	5.8	2.4

FINANCIAL CONDITIONS IN CALIFORNIA

San Francisco is the financial center of the Pacific Coast. At the close of the year 1917 the principal items of the resources and liabilities of the banks of San Francisco and of California were as follows:

Capital, Surplus and Undivided Profits

	San Francisco	California
National banks.....	\$53,543,000.00	\$106,418,000.00
State commercial and trust.....	17,305,140.00	55,017,375.83
Total commercial.....	\$70,848,140.00	\$161,435,375.83
Savings banks.....	19,812,101.68	58,209,836.81
Totals.....	\$90,660,241.68	\$219,645,212.64

Individual Deposits

	San Francisco	California
National banks.....	\$189,017,000.00	\$469,668,000.00
State commercial and trust.....	69,999,450.18	210,581,378.90
Total commercial.....	\$259,016,450.18	\$680,249,378.90
Savings banks.....	265,450,229.98	606,205,440.51
Totals.....	\$524,466,680.16	\$1,286,454,819.41

Loans, Including Overdrafts

	San Francisco	California
National banks.....	\$186,162,000.00	\$404,354,000.00
State commercial and trust.....	55,121,711.92	153,162,872.11
Total commercial.....	\$241,283,711.92	\$557,516,872.11
Savings banks.....	165,778,236.87	421,908,933.25
Totals.....	\$407,061,948.79	\$979,425,805.36

Resources

	San Francisco	California
National banks.....	\$370,506,000.00	\$791,168,000.00
State commercial and trust.....	120,825,578.60	314,094,662.72
Total commercial.....	\$491,331,578.60	\$1,105,262,662.72
Savings banks.....	288,927,675.46	679,106,795.65
Totals.....	\$780,259,254.06	\$1,884,369,458.37

The Banks of California

The cardinal feature of the fiscal year for the banks of California is the behavior of these institutions under conditions of financial and industrial abnormalism provoked by the war. There has been a measurable redistribution of credits but no disturbance of healthy relationships in finance and industry. There has been an enormous increase in banking assets but there has been conservatism and discretion exercised in their use. Industrial and manufacturing communities have made new and exceptional demands upon banking capital to meet national emergencies but these have found a response equal to their needs.

The year has been one of expanding opportunities, of increasing production and of augmented industrial, agricultural and manufacturing output. General business has been good; the crops generally have been heavy; industries have been active; construction, particularly in engineering and building, has been stimulated; bank clearings have increased; foreign trade is improving; money rates have shown no perceptible advance; labor is fully employed; agencies of transportation are abundantly occupied; the outlook is one for great activity. The period has been one of expansion but not of inflation. While there was a considerable liquidation of investments to pay for the first national loan, the resources of the banks are still available for the needs of the State and for future requirements of the national government.

The banking power of the banks of California is increasing amazingly. The combined assets of State banks as disclosed in the report of June 20, 1917, were \$929,224,-088.73, an increase over the previous year of an astonishing aggregate of \$111,429,739.03.

During the year the aggregate of individual deposits in State banks increased over the total of the preceding year in the astounding total of \$89,065,148.79, the entire sum of individual deposits being \$768,371,340.45. In the fiscal year 1914-15 the increase in individual deposits over the preceding fiscal year was something less than six million dollars; in the fiscal year 1915-16 the increase over the preceding year was almost ninety-eight million dollars, and in the period under discussion the increase was more than eighty-nine million dollars. The record is epochal. Of the great total of individual deposits \$596,325,059.04 are savings deposits and \$172,046,281.41 are commercial deposits. There are in the State banks 1,584,940 depositors, an increase of 109,526 individual depositors for the year.

Savings deposits in the banks of California have increased with bewildering rapidity. In the fiscal year 1914-15 savings deposits increased in the sum of \$9,466,788.12; in the fiscal year 1915-16 savings deposits surpassed those of the previous year in the enormous aggregate of \$70,201,819.54; and in the fiscal year 1916-17 savings deposits showed a growth over the total of the preceding year of \$67,414,811.81.

Compared with the reports of date June 30, 1916, the banks under State authority disclose the following:

Resources

	June 20, 1917	June 30, 1916	Increase	Decrease
Loans and discounts.....	\$555,399,379.53	\$494,567,278.84	\$60,832,100.69	
Overdrafts.....	564,380.58	301,265.75	263,114.83	
Bonds, warrants and other securities.....	193,117,538.05	146,824,026.61	46,293,511.44	
Bank premises, furniture and vaults.....	28,360,080.41	27,155,697.37	1,204,383.04	
Other real estate owned.....	6,516,115.39	6,364,396.44	151,718.95	
Due from banks.....	95,270,603.85	96,141,557.37		\$870,953.52
Cash on hand.....	37,939,832.47	34,924,199.64	3,015,632.83	
Exchanges for clearing house.....	2,757,452.12	5,421,016.51		2,663,564.39
Checks and other cash items.....	1,975,217.83	1,943,449.66	31,768.17	
Advances to court trusts.....	52,409.21	58,369.22		5,960.01
Other resources.....	7,271,079.29	4,043,092.29	3,227,987.00	
Totals.....	\$929,224,088.73	\$817,744,349.70	\$111,020,216.95	\$3,540,477.92

Liabilities

	June 20, 1917	June 30, 1916	Increase	Decrease
Capital stock paid in.....	\$65,956,760.00	\$63,711,026.66	\$2,245,733.34	
Surplus.....	30,945,956.08	29,817,183.13	1,128,772.95	
Undivided profits.....	18,676,026.02	10,617,387.41	8,058,638.61	
Bills payable.....	487,000.00	847,229.62		\$360,229.62
Notes rediscounted.....		47,500.00		47,500.00
Deposits due to banks.....	19,839,889.81	12,639,682.52	7,200,207.29	
Individual deposits.....	768,371,340.45	679,306,191.66	89,065,148.79	
Deposits of money received from executors, etc.....	371,356.17	368,750.42	2,605.75	
State, county and municipal deposits.....	17,761,068.74	15,706,984.60	2,054,084.14	
Postal savings deposits.....	1,075,098.23	1,032,049.80	43,048.43	
Other liabilities.....	5,739,593.23	3,650,363.88	2,089,229.35	
Totals.....	\$929,224,088.73	\$817,744,349.70	\$111,887,468.65	\$407,729.62

It will be noted from this summary that the banks increased their aggregate of paid in capital in the sum of \$2,245,733.34 and their surplus in the sum of \$1,128,722.95. The increase in surplus is notable because of the fact that there has been no suspension

of the policy of this department to require that the item of surplus shall be written in terms of market value.

The school savings system is growing rapidly. It is performing a commendable service in the inculcation of notions of thrift in young people and the deposits are increasing far beyond expectations. Banks are recognizing the manifest virtues of the system and several institutions added their efforts during the year to those already contributing.

In the matter of unclaimed and dormant deposits, those in the ten-year period, which must be published but which are not yet subject to the process of escheat, now aggregate \$620,353.68, an increase over the preceding year of \$282,785.18. In the twenty-year classification, which includes those now subject to escheat, the total is \$126,509.08.

Clearing House Exhibits

The bank clearings of San Francisco have more than doubled since 1900. Los Angeles, the other large financial center of the State, while showing a smaller aggregate, has a larger proportionate increase.

The San Francisco Clearing House was organized March, 1876. The clearings for the 9 2-3 months of that year were \$476,123,237.97. In 1890 they were \$851,066,172.60. In 1900 they were \$1,029,582,574.78. In 1917 they were \$4,837,854,596.20. In the 41 years 9 2-3 months of its existence the total amount of clearings has been \$56,615,526,806.85. The average daily clearings increased from \$1,927,624 in 1876 to \$8,895,554.66 in 1912 and \$16,019,386.08 in 1917.

The gain in volume of clearing house business strongly reflects the increase in the mineral and agricultural products and the increase in the amount of exports and imports, as well as the sales of real estate and the building operations of the city.

Other cities of California show an increase that indicates the marvelous development of the State now going on.

The record of clearings in the two principal cities in the past fifteen years is as follows:

San Francisco		Los Angeles	
Year	Clearings	Year	Clearings
1903.....	\$1,520,200,682.07	1903.....	\$307,316,530.90
1904.....	1,534,631,136.73	1904.....	345,343,956.35
1905.....	1,834,549,788.51	1905.....	478,985,298.40
1906.....	1,998,400,779.06	1906.....	578,635,516.82
1907.....	2,133,882,625.80	1907.....	581,803,982.00
1908.....	1,757,151,850.08	1908.....	505,588,756.02
1909.....	1,979,872,570.06	1909.....	673,165,728.81
1910.....	2,323,772,870.99	1910.....	811,377,487.47
1911.....	2,427,075,543.46	1911.....	942,914,424.19
1912.....	2,677,561,952.27	1912.....	1,168,941,700.02
1913.....	2,624,428,824.74	1913.....	1,211,167,980.18
1914.....	2,516,004,817.00	1914.....	1,145,167,110.19
1915.....	2,693,688,925.00	1915.....	1,049,110,927.00
1916.....	3,479,862,482.00	1916.....	1,292,961,997.00
1917.....	4,837,854,596.00	1917.....	1,502,250,000.00

In 1917 San Francisco held its rank of seventh on the list of clearings and Los Angeles ranked seventeenth.

Bank Clearings for 1917

San Francisco.....	\$4,837,854,596.00
The San Francisco clearings for the year 1917 were \$382,168,669 greater than the combined clearings of the next seven largest Coast cities:	
Los Angeles.....	\$1,502,250,000
Seattle.....	1,151,509,210
Portland.....	892,030,208
Spokane.....	344,362,649
Oakland.....	269,919,938
Tacoma.....	174,682,835
San Diego.....	120,931,087
	<u>\$4,455,685,927</u>

Other Clearing House Cities

	1912	1913	1914	1915	1916	1917
Oakland.....	\$222,570,346.39	\$188,730,763.00	\$176,074,062.82	\$188,464,820.00	\$223,044,092.00	\$269,919,938.00
Sacramento.....	92,747,060.69	108,268,688.39	103,284,903.09	101,129,004.00	127,219,795.00	174,682,835.00
San Diego.....	131,884,087.00	134,145,293.00	108,102,287.90	99,636,940.00	112,043,265.00	120,931,067.00
Fresno.....	51,400,594.73	57,334,801.12	53,442,675.00	53,554,234.00	71,926,811.00	108,414,657.00
Stockton.....	45,064,874.08	45,925,831.09	47,267,207.00	50,241,277.00	71,802,911.00	93,453,485.00
San Jose.....	35,882,473.55	35,780,998.59	36,344,899.14	34,935,899.00	42,806,021.00	64,108,480.00
Pasadena.....	47,144,736.48	47,818,722.51	43,946,053.76	43,331,333.00	49,630,180.00	58,070,355.00
Bakersfield (organised in March, 1913).....	21,500,000.00	23,556,106.08	23,561,216.96	20,130,949.00	28,342,893.00	38,388,521.00
Long Beach (organised May 18, 1914).....			17,378,405.86	20,418,091.00	30,469,429.00	30,469,429.00
Santa Rosa.....			12,969,860.00	11,961,550.00	12,809,881.00	15,083,514.00

FEDERAL BUSINESS

COMMERCIAL MOVEMENTS BY SEA FOR 1917

The following figures were supplied by the Department of Commerce, United States:

District of San Francisco:

Imports—Year ending December 31, 1917.....	\$231,979,474.00
Exports—Year ending December 31, 1917 (Domestic).....	168,468,148.00
Exports—Year ending December 31, 1917 (Foreign).....	7,183,965.00
Customs Receipts—Year ending December 31, 1917.....	5,511,646.72
Shipments to non-contiguous territory, year ending December 31, 1916—Hawaii, Samoa, Guam, Alaska.....	46,204,346.00

District of Los Angeles:

Imports—Year 1917.....	8,063,242.00
Exports—Year 1917.....	7,178,882.00

The Postal receipts for 1917 in San Francisco amounted to \$3,964,045.44, and the Internal Revenue receipts totaled \$22,051,210.88.

From the report of T. W. H. Shanahan, Superintendent of the United States Mint at San Francisco, California, for the year ended December 31, 1917, we find that 3,345,-410.211 fine ounces of gold valued at \$69,155,766.61, and 7,035,142.21 fine ounces of silver valued at \$9,725,442.78 were received during 1917. The total coinage at the San Francisco Mint amounted to 97,339,173 pieces and included, beside the usual United States coinage, a large amount of money for the Philippine Islands.

PROGRESS IN THE METROPOLIS

The twelfth anniversary of the great disaster of April, 1906, finds few vestiges of the ruin then wrought. A new city of imposing modern structures occupies the ground where before stood the many examples of architectural variety evolved during the last half of the nineteenth century.

San Francisco has won the admiration and wonder of the world by the courage and energy of its rebuilding, and stands today, owing to the character and equipment of its new structures, more fit than ever to occupy its proper place among the up-to-date cities of the world.

The disaster marked the beginning of a new era and made it possible to modernize a city which represented sixty-one years of growth. Already what was at the time regarded as an overwhelming calamity has brought its benefits. The confidence of its people has been justified and the whole State contributes and assists in the great prosperity which is assured for the future.

Reconstruction of San Francisco

The reconstruction of the city involved vast expenditures by the municipality for streets, sewers, fire system, school houses and other municipal buildings, all of which have been of the most substantial character.

The buildings destroyed in San Francisco by the fire of 1906 numbered 28,188 valued at \$105,000,000. The money expended by private parties for labor on the new buildings has amounted to some \$100,000,000, while the municipality has expended large sums on the same account. The following figures show the amount expended previous to January 1, 1916. No later figures available.

Expended Since 1906 by the Municipality

New sewer system, nearly complete.....	\$ 6,150,000
High pressure fire system.....	5,750,000
Municipal street railways.....	5,500,000
Asphalt plant.....	60,000
Civic Center.....	8,800,000
Schools.....	7,500,000
Hospitals.....	3,000,000
Fire and police stations.....	510,000
Public Library lands.....	740,000
Hall of Justice and County Jail.....	1,350,000
Hetch Hetchy Water Supply—lands and preliminary work.....	4,000,000
Docks.....	11,000,000
Streets and pavements.....	16,000,000
New parks and public playgrounds.....	1,360,000
Traffic tunnels.....	4,600,000
Private buildings.....	400,000,000
Total.....	\$476,320,000

Building Contracts in San Francisco

	Private	P. P. I. E.	Municipal	State	Federal	Total
1917.....	\$13,929,780		\$ 834,075	\$1,658,639	\$2,058,033	\$18,480,527
1916.....	16,156,187		2,040,343	639,643	278,148	19,114,321
1915.....	15,735,313	\$418,746	1,288,991	1,060,934	122,213	18,626,199
1914.....	17,385,736	4,716,497	5,927,798	2,151,726	292,700	30,468,457
1913.....	21,517,468	6,075,901	4,054,696	(1,149,194)	.....	32,797,259

Previous to 1913 figures for private building operations only were used and are exclusive of all Municipal, State, Federal and Exposition buildings.

The contracts recorded are as follows:

1912.....	\$26,269,006	1906.....	\$39,254,467
1911.....	24,495,168	1905.....	20,111,861
1910.....	22,873,942	1904.....	16,916,118
1909.....	30,411,196	1903.....	14,984,514
1908.....	35,128,549	1902.....	14,289,938
1907.....	50,499,499		

The total building contracts entered into since the fire amounted to \$379,958,742, exclusive of the work done by the municipality, the State of California, the United States Government and the Panama-Pacific International Exposition Company prior to December 31, 1917. All buildings erected within two years after the fire cost from 25 to 30 per cent more than the original recorded contract price; since then they have cost from 10 to 15 per cent more than the original contract price. It is, therefore, conservatively estimated that the total expended for building operations carried on in San Francisco since the fire is not less than \$400,000,000, not including operations carried on by the State of California, the United States Government, the Panama-Pacific International Exposition, or the municipal government.

Exceptional hotel accommodations, together with the new Auditorium located in the Civic Center at a cost of \$1,000,000, insures San Francisco's future as a great convention city. The Auditorium has a seating capacity of 12,000.

San Francisco bears the same relation to the Pacific Coast that New York does to the nation; for the year 1917 San Francisco ranked:

- 1st in actual value of land and improvements per capita.
- 3d in average capital per national bank.
- 7th in building contracts.
- 3d in foreign imports.
- 5th in total national banking capital.
- 8th in foreign exports of domestic goods.
- 7th in bank clearings.
- 11th in number of manufacturing establishments.

Over one-half the population are savings bank depositors.

The total amount expended in the rebuilding of San Francisco is equal to the cost of the Panama Canal.

San Francisco has a lower percentage of bonded debt to the assessed valuation than any larger city in the United States.

Of the eleven principal cities of the United States, San Francisco has the lowest percentage of mortgaged indebtedness on real estate and the highest actual valuation of land and improvements per capita.

BUILDING ACTIVITIES THROUGHOUT THE STATE

Fluctuation in building operations in this State are recorded in the following table:

Valuation			Valuation		
Los Angeles.....	1912.....	\$31,367,995	Sacramento.....	1912.....	\$2,793,544
	1913.....	31,641,921		1913.....	3,416,057
	1914.....	18,361,925		1914.....	2,329,978
	1915.....	11,888,662		1915.....	1,395,578
	1916.....	15,036,045		1916.....	2,102,158
	1917.....	16,932,082		1917.....	1,547,836
Oakland.....	1912.....	9,009,734	Pasadena.....	1912.....	2,166,352
	1913.....	9,106,191		1913.....	2,787,507
	1914.....	5,217,520		1914.....	2,133,781
	1915.....	5,045,289		1915.....	1,494,349
	1916.....	5,368,290		1916.....	1,624,647
	1917.....	4,442,520		1917.....	1,333,018
San Diego.....	1912.....	10,001,004	San Jose.....	1912.....	857,166
	1913.....	7,035,797		1913.....	485,006
	1914.....	3,143,321		1914.....	590,280
	1915.....	1,275,982		1915.....	555,910
	1916.....	1,869,994		1916.....	865,741
	1917.....	906,097		1917.....	489,577
Stockton.....	1912.....	1,129,170	Fresno.....	1912.....	1,697,294
	1913.....	946,273		1913.....	1,776,666
	1914.....	1,117,787		1914.....	1,122,505
	1915.....	1,019,452		1915.....	1,051,666
	1916.....	1,138,174		1916.....	884,100
	1917.....	1,355,243		1917.....	2,036,756
Bakersfield.....	1913.....	760,744	Santa Rosa.....	1914.....	175,457
	1914.....	283,970		1915.....	157,268
	1915.....	164,916		1916.....	100,294
	1916.....	331,663		1917.....	52,972
	1917.....	604,585	Long Beach.....	1914.....	283,870
		1915.....		1,383,055	
		1916.....		1,065,205	
		1917.....		1,022,205	

San Francisco Harbor

San Francisco has the largest land-locked harbor in the world.

In area the Bay of San Francisco covers 420 square miles and has a shore line, exclusive of navigable inlets, of 100 miles. The City and County (Consolidated) of San Francisco has a water frontage on the bay of 10 miles. The pierhead line is 800 feet from the bulkhead line and is fixed by the United States Government. On January 1, 1918, there was a total completed sea wall 17,000 feet in length, 39 completed piers and four under construction, from 550 to 800 feet in length and from 138 to 200 feet in width. The total berth space of all completed piers and bulkhead wharves is 15.9 miles. The dock area of all piers is 4,591,186 square feet.

The San Francisco harbor front is owned by the State of California. The new docks and wharves are being built under a \$10,000,000 State bond issue, the interest on same and all sinking and redemption funds being paid for out of the harbor revenues. The Embarcadero, the street fronting the harbor, is also owned by the State, which operates a Belt Line Railroad over its entire length. On January 1, 1918, the Belt Line owned and operated 4.79 miles of main line and 10.03 miles of yard and sidings tracks. In addition the Belt Line operated 10.18 miles of privately owned industrial tracks. Freight can be unloaded directly on the freight cars on the Belt Line from

the freighter alongside the dock (the Belt Line being connected with the main lines of all the transcontinental railroads and the spur tracks serving San Francisco's industrial area), so that freight can be transferred direct from steamer to warehouse or factory.

Deep water is found at all the docks and wharves on the San Francisco water front. Typhoons and hurricanes are unknown and the greatest Pacific liners dock without difficulty in any weather and at all stages of the tide. Ten fathoms is the average depth in the bay, so that safe anchorages are obtainable at all times. A depth of six and seven fathoms is reached at the end of all the piers. The only transport docks owned by the United States are at San Francisco.

The Federal Government has made an arrangement with the Hunters' Point Dry Dock Company (on the San Francisco side) to construct a drydock 1,050 feet long, the contract for which has been let and work is now under way. This will be the largest dry dock on the Pacific Coast. The United States will have first call on this dock at all times for the docking and repairing of government vessels. Two docks are now operated at Hunters' Point, one of them being 750 feet long.

All of the passenger and freight steamers sailing from San Francisco leave from the San Francisco side of the bay, with the exception of some small lumber schooners. Direct steamer connections may be made from here to all points along the Pacific Coast of North and South America, Siberia, Japan, China, the Philippines, the Orient, Hawaii, New Zealand, Australia, Alaska, as well as services through the Canal to Atlantic Coast points and Europe.

Oakland Harbor

Oakland harbor has been selected as the site of the Pacific Coast naval base, a great outfitting, repair and supply station for United States warships, to cost \$36,307,000. This will be situated just across the Southern Pacific's Alameda mole, the south wall of the Oakland Inner Harbor.

The Inner Harbor itself is now the center of the largest steel shipbuilding plants in California, both in size and amount of business. Three large yards are in constant operation building cargo carriers. Another large ship plant is in process of construction on the western waterfront.

It is conservatively estimated by shipbuilders that \$150,000,000 will be expended in 1918 for vessel construction in these and other smaller plants.

In the train of this maritime activity have come many co-related plants, and many more are seeking locations of plants because of the selection of the Alameda site for the naval base.

Chief among such industries is the manufacture of gas engines, both for marine and other purposes. Oakland now leads the country in this line of manufacture.

Copra, and cocoanut oil, chemicals used in aniline dyes, automobiles, canned fruits and vegetables, airplanes, lumber, food products and steel are other important articles of manufacture.

The United States Government has expended nearly \$7,500,000 on the harbor, principally on the Inner Harbor, which now has been dredged to a depth of 30 feet at low water and a width of 300 feet from San Francisco Bay to the swing bridges, a distance of about three miles. The channel has also been dredged above that point to a depth of 25 feet for the same distance. Thence into San Leandro Bay the government is now engaged in deepening the channel to eighteen feet, Congress having appropriated \$231,000 for that purpose in 1917.

The City of Oakland has expended about \$3,000,000 in harbor improvements and extensions, \$125,000 of that amount in the year 1917. Fifty thousand dollars was devoted to dredging a 30-foot channel along the western waterfront and the remainder to maintenance.

Oakland's waterfront is 29 miles long. Its docks have more than 9,000,000 square feet of area. All of the docks, under the provisions of city ordinances, are public docks, even if privately owned.

Much of the waterfront lands are owned by the city, but, with the exception of the western waterfront, are mostly under long term leases. On the western waterfront the city owns 268 acres, of which about 220 are available for lease, about 40 acres having been leased in 1917 for a large shipbuilding plant.

Construction in 1918 of a bascule bridge over the inner harbor has been ordered by the war department, thus eliminating a hindrance to navigation in the way of two obsolete swing bridges which lie close to the water.

Richmond Harbor

To Richmond belongs the honor of having practically completed one of the largest pieces of harbor development work ever undertaken by a city of its size and age. This city began its career in 1901, incorporated in 1907, and now has a population of 22,000.

The project consists of an Inner Harbor with a channel to deep water, a projecting arm and tunnel and a roadway through the rim of hills skirting the natural deep water frontage of the city connecting with a wharf 740 feet long at the outer end of the harbor channel and providing immediate use of this much of the new project while the rest is under construction.

Work on the tunnel and highway to the entrance channel of the new harbor as well as the big initial wharf has been completed at a cost of about \$600,000 and represents the highest class of construction in this line. The tunnel is concrete, the highway is paved with asphalt and the wharf is constructed with concrete piling and every modern freight handling device has been installed.

The United States Army Board of Engineers for Rivers and Harbors at Washington have approved and accepted the plans, with accompanying recommendations to the Secretary of War for \$428,000 as a preliminary appropriation. The Secretary of War has made similar recommendation to Congress and that body, through its committee, included \$100,000 in the Rivers and Harbors Bill to start the project.

Dredging has been done on the inner part of the new harbor. The expenditure for this work will be met by an equal amount on the part of the Government. More money will be asked from the Federal treasury as the city proceeds with construction and more bonds will be voted by the city.

The total cost of the new harbor, which, including the main channel, extends from a point beyond the Santa Fe wharves, to Point Isabel, in the vicinity of Stege Station, will be approximately \$4,000,000. The depth of the main harbor will range from twenty-four to thirty feet. The work of three large dredgers which are throwing up bulkheads for the channel and basin serves the dual purpose of giving depth to the harbor and of filling in the acreage behind the bulkheads, thus forming new land which will be leased by the city at a nominal figure for shipping, manufacturing and other enterprises.

A Federal appropriation of \$428,000 for the Richmond Harbor, with \$100,000 immediately available was embraced in the Rivers and Harbors Appropriation bill passed by the House of Representatives this year, contingent on a like amount being spent by the city. There has been spent by the City of Richmond to date \$678,000, and there remains a balance of the bond issue of \$1,170,000 voted by the people.

This Inner Harbor is really an auxiliary harbor, as the city possesses a natural deep water frontage at its western limits owned by corporations which have established great wharves and plants upon it; notable among these are the Standard Oil Company, and the California Wine Association which operates the largest winery in the world, at Winehaven. The Richmond Belt Railroad Company has wharves with forty feet of water where the biggest freighters afloat can dock, which are available for big enterprises.

Los Angeles Harbor

The Port of Los Angeles (San Pedro) is a broad harbor, protected by a great breakwater more than two miles long, which was built by the U. S. Government at a cost of \$3,100,000. This is the Outer Harbor. Extending half a mile into this protected harbor are solid earth-filled piers with wharves, some of which are the best that engineering skill could devise. There are now more than one and one-half miles of these wharves built in the Outer Harbor, with from thirty to thirty-five feet of water in front of them.

One of these piers, Municipal Pier No. 1, is 2,520 feet long and 650 feet wide. On the westerly side is a reinforced concrete wharf, fronting on a channel 400 feet wide and 35 feet deep at low tide. On this wharf is a steel and asbestos-protected metal transit shed, 1,800 feet long and 100 feet wide, and in the center of the pier is a six-story reinforced concrete warehouse, containing more than ten acres of floor space, and with capacity for 80,000 tons of cargo.

The main channel leading from the Outer Harbor to the Inner Harbor is 400 to 900 feet wide, with a depth of 30 feet at low tide, extending two and one-half miles to a turning basis 1,600 feet in diameter. This channel is lined with wharves along most of its length. In the Inner Harbor are over 20,000 feet of channels 200 to 600 feet wide and 20 to 34 feet deep. Preparations are under way to widen the main channel to 1,000 feet.

In the last six years Los Angeles has expended \$5,800,000 for harbor improvements and it stands pledged to spend a total of \$10,000,000 by 1919, the U. S. Government having expended about \$5,800,000 since 1871.

The net tonnage of vessels entering the harbor increased from 356,371 tons in 1902 to 2,414,597 tons for the fiscal year ending June 30, 1917. The total tonnage of all commodities for the fiscal year 1917 amounted to approximately 2,350,000 tons, with a value of more than \$80,000,000.

There are now completed over 13,000 feet of municipal wharves, and over 3,800 feet of freight sheds, 100 feet wide, together with necessary rail terminals and paved street. There are also 7,000 feet of wharves operated by railroad companies, 7,960 feet operated by private wharf companies, and 5,229 feet by lumber companies.

The harbor is controlled by the City of Los Angeles through its Board of Harbor Commissioners, which also operates the municipally-owned port facilities. The city owns thirteen miles of Harbor Belt Line Railroad, over which all railroads serve all municipal port facilities.

San Diego Harbor

The Bay of San Diego, area 22 square miles, is a natural basin having a crescent shape, completely land-locked, being separated from the Pacific Ocean by the peninsula of San Diego, a long, narrow sand spit terminating at its northern end in two broad divisions known respectively as North Island and South Island, each having an area of approximately 1,400 acres. On the north side of the harbor entrance is the long promontory of Point Loma, 400 feet high, on which are situated two lighthouses, Fort Rosecrans, the Quarantine station, a U. S. Navy coaling station, and a U. S. Navy radio station. On the south side of the channel is the government jetty, a mile and a half long, and Fort Pio Pico, a water battery on North Island.

Depth of water over the bar at mean low tide is 39 feet, and the main channel inside the bay is from 1,500 to 2,000 feet in width, and from 35 to 70 feet in depth at low water. By State legislative enactment, the city of San Diego controls its waterfront and tide lands, the latter embracing 1,460 acres. The city has expended \$1,400,000 in improvements, which include a steel and concrete municipal pier 800 feet long and 130 feet wide, located at the foot of Broadway, in the vicinity of the Union Railway station. A steel warehouse and a concrete administration building have been constructed on the pier, and a bulkhead 2,675 feet long has been built and 70 acres of tideland near the business district have been reclaimed.

At the northern end of the harbor the U. S. Government is constructing an extensive marine base, the largest on the Pacific Coast, on 732 acres of reclaimed tidelands, 500 acres of which were donated by the city of San Diego.

North Island, owned by the government, is entirely occupied by the U. S. Army and U. S. Navy Schools of Aviation, where several thousand aviators are being trained for service.

On the South Island is the City of Coronado, connected with San Diego by ferry and by boulevard around the peninsula.

San Diego is the first point in the United States north of the Panama Canal. The mean range of tide is but 3.9 feet, and because of its entire freedom from storms of any kind, San Diego harbor is regarded as one of the best in the world.

The San Diego & Arizona Railway, 146 miles in length, to be completed in December, 1918, extending from San Diego to El Centro, where it will connect with eastern transcontinental systems, as well as the rich Imperial Valley, will bring a largely increased volume of business to San Diego harbor.

Established industries on the harbor front now include shipyards, kelp product factories, sawmills and fish, fruit and vegetable canneries.

Eureka Harbor

Humboldt Bay, a beautiful body of water at the very doors of the town, is fourteen miles long and from half a mile to four miles wide. It is traversed by twenty-one miles of lineal channel and is protected by two peninsulas of low sand dunes—one from the north and one from the south.

Being so completely land-locked, this harbor is of the utmost importance to a coast so barren of good harbors as is the Pacific; but its usefulness has in the past been seriously impaired by shifting sand bars which obstructed its entrance, and by the shallowness of some of its inner channels. In 1889 the general government began improving the entrance to the harbor by extending two jetties of rock, one on each side of the channel, so as to confine the waters to a permanent way. This work was completed in September, 1899, at a cost of more than two millions of dollars.

A survey made in 1903 showed the least depth of water in the channel to be in excess of 30 feet at low tide; by 1905 this had decreased to 27 feet; and in September 1907, a survey found the channel depth reduced to 22½ feet, and led the engineers to recommend the restoration of the jetties at an estimated cost of \$1,037,400. In 1910, Congress adopted this project, and appropriated \$150,000 for the first year's work. In 1911, \$170,000 was appropriated, and the project placed upon the continuing contract list, insuring its completion. The work was begun in 1912, and by July 30, 1915, the south jetty was fully reconstructed, and work was begun on the north jetty, August 1, 1915. The original estimated amount has been appropriated and used, and in 1914, \$200,000 additional was allotted and for 1915, \$300,000 was granted, and for 1916 \$300,000 for construction and \$75,000 for maintenance. For 1917, \$190,500 was appropriated for construction and \$180,500 for maintenance, but these amounts have not been used as on September 30, 1917, the work was stopped owing to war conditions and increased cost of material. Doubtless the total cost of this reconstruction will be over \$2,000,000. The depth of water in the channel is now over 26 feet at low tide.

An average of nearly 1,000 vessels arrive and depart from this harbor annually and the value of their outgoing cargoes averages over \$10,000,000, while the incoming shipments are about 75% of that amount. The foreign export shipments are confined almost entirely to redwood lumber, the amount so shipped in 1917 being 13,299,032 feet valued at \$386,579.

Monterey Bay

Monterey Bay might be considered as a gulf, on the south side of which is a harbor protected by a peninsula jutting out to the northwest. The entrance to the bay faces southwest, therefore, from the inner harbor of Monterey the ocean is not in view, and only land is seen.

Monterey harbor may be entered safely to secure anchorage in any kind of weather by the largest vessels, without a tug or pilot, as the entrance has no bar, nor are there any dangerous hidden reefs or rocks.

It is the natural outlet for the great San Joaquin Valley with its 11,000,000 acres of rich land. Several projects are now under way to connect this valley with Monterey by rail. According to the United States Engineers, the undertow, which causes ships to chafe against the piers is the only drawback. To remedy this, however, the State and National Governments have appropriated \$800,000, contingent upon the assurance that a railroad to the interior will be built within a reasonable time.

Santa Cruz Harbor

Santa Cruz, noted as a seaside resort, is not on the ocean coast, but nestles in behind Light-house Point, on the shore of Monterey Bay. In a semicircle behind the city lie the beautiful Santa Cruz Mountains. The bathing beach is nearly a mile long and slopes gradually from the famous beach buildings out into the bay. In years past a small coasting steamer touched occasionally at Fisherman's Wharf, which does not extend out far enough to make landings safe. The new Municipal Wharf, which has just been completed, reaches out into the bay over a half mile and already two lines of steamers are making regular trips from both north and south. Many tons of general merchandise are being handled over the new wharf as well as thousands of tons of cement, lime, canned goods and other products shipped from the place on special steamers.

San Luis Obispo Bay

San Luis Obispo Bay is nine miles south of the city of San Luis Obispo, 204 miles northwest of Los Angeles Harbor, and 249 miles southeast of San Francisco Harbor. The harbor is an open roadstead, protected on the west and southwest by Point San Luis and a breakwater about half a mile long.

There was originally a Whaler Reef, extending nearly half a mile southeasterly from Point San Luis, forming more or less of a natural breakwater, but during the winter season the harbor was exposed to the heavy swell caused by the southerly gales. The minimum of depth varied from 20 to 33 feet at mean low water in the protected area. The mean range of tide is 3.7 feet.

Port San Luis is one of the largest oil-shipping ports, if not the largest, on the Pacific Coast. A regular oil fleet consisting of about twenty vessels and barges carries oil from this Port to Alaskan and Chilean points. Large consignments are also shipped to Seattle, Vancouver, Honolulu and the Canal Zone.

Under the jurisdiction of the Producers Transportation Company the total pipe mileage terminating at Port San Luis is between 600 and 700 miles. The oil is brought from fields located at Coalinga, Kern, Midway, Sunset, McKittrick, Beldridge, Lost Hills and Santa Maria.

Steamers of the Pacific Coast Steamship Company call twice a week from the north and south. There is said to be 38 feet of water at the wharf built by San Luis Obispo County, and 30 feet at the Port San Luis wharf.

According to 1915 statistics, 636 American and 15 foreign steamers, one sailing vessel, and 109 unrigged vessels cleared from this port carrying a tonnage of 1,051,681 valued at \$10,355,955.

A breakwater of sufficient length and height to enable deep draft vessels to lie at the wharf, has been built by the U. S. Government from Point San Luis to Whaler Island and for a distance of 1,820 feet southeasterly of Whaler Island, a total distance, including the island, of 2,401 feet, resulting in increased security to vessels in the anchorage and at the landing. The project was completed August 27, 1913, at a cost of \$568,418.08 for new work and \$19.75 for maintenance, a total of \$568,437.83. Since the completion of this work the commerce of the port has steadily grown.

Sacramento Harbor

Although the government has been working for months on compilation of data on Sacramento River shipments these figures will not be available for some time. It has been possible to secure, however, a preliminary survey for the past twelve months which can safely be relied upon as coming very close to the actual tonnage handled on the fourth greatest shipping river in the United States, which conclusively proves that during 1917 and the first part of 1918, the Sacramento River has broken all records by a big margin. This estimate shows that nearly one billion pounds of freight was handled, chiefly products of the Sacramento Valley, with an approximate value of \$80,000,000. Past records have averaged \$50,000,000 per annum, showing the wonderful strides being made during the present season.

The shipment of canned goods from the various packing houses situated along this river made up one-fifth of the total tonnage carried during the past year. Added to this were 450,000 sacks of beans of 100 lbs. each; 2,200 carloads of deciduous fruits which were shipped to eastern markets; 500 cars of canning fruits for local plants in San Francisco and Sacramento; 2,500 cars of miscellaneous garden produce; 240 cars of fresh asparagus for eastern markets; 200,000 sacks of rice, 100 lbs. each; 2,000,000 sacks of grain from the upper Sacramento Valley; 200,000 tons of merchandise and 190 cars of box shooks.

Owing to the heavy shipments by the government now under way, beans, rice, barley, wheat and other grains are coming down the river at the present time at the rate of nearly 2,500 tons per week.

With the cleanup of last year's products in the Sacramento Valley, the great portion of which is and will be handled on the river, the record will be a much greater one than for the previous twelve months.

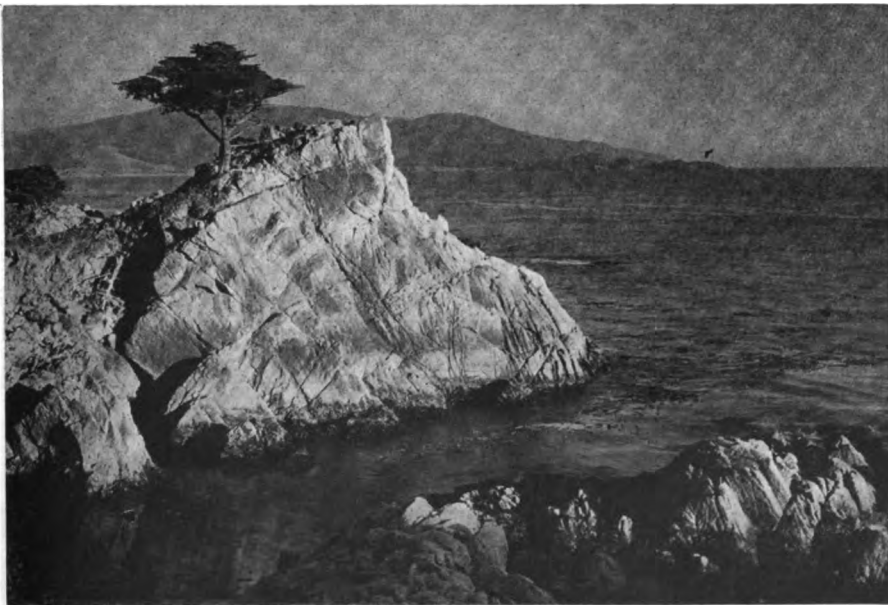
Stockton Harbor

More than four miles of the nearly six miles of waterfront available in the Stockton Harbor are owned by the City of Stockton. For thirty years it has been the policy of the city—and since 1911 it has been a charter provision—to apportion, besides all wharf and tonnage dues, four per cent of the entire revenue of the city for the permanent improvement of the harbor. (About \$900,000 has been expended to date). There are about 16,500 feet of wharves.

Stockton Channel is a developed arm of the San Joaquin River and penetrates into the heart of the business district of Stockton. Daily steamers arrive from and depart for San Francisco, and the famous "Mosquito Fleet" serves the "Holland of America," the unique farming region of the San Joaquin Delta with its 400 miles of navigable waterways.

Stockton is looking forward to the virtually assured approval by the War Department of its project for a channel 20 feet deep and 300 feet wide; negotiations have been consummated for the necessary rights of way. At present the government maintains a nine foot channel and has authorized the preliminary steps looking toward the greater depth, which will permit navigation by ocean steam schooners and similar craft.

The commerce of the San Joaquin River for 1916—the last year for which the figures are available—was 824,222 tons valued at \$142,179,160. Two hundred vessels carried 182,486 passengers.



MIDWAY POINT, CARMEL BAY

CLIMATOLOGICAL DATA FOR 1917

(Table from Annual Summary, California Section, Weather Bureau Record, 1917, by E. A. Beals, Forecaster.)

Stations	Counties	Elevation feet	Temperature Degrees Fahrenheit			Precipitation inches		Rainy days	Sky			Type of Country
			Annual Mean	High- est	Low- est	Total for year	Total snow- fall		Clear days	Partly cloudy days	Cloudy days	
Independence	Inyo	3907	56.5	102	-1	2.11	6	18	229	99	37	Mountain and High Plateau
Yreka	Siakiyou	2625	49.0	105	-3	12.06	26	69	171	92	102	
Alturas	Modoc	4400	45.1	104	-32	11.33	67	41	193	106	66	
Siscon	Siakiyou	3555	48.9	99	0	22.44	75	67	259	57	49	
Quincy	Plumas	3400	51.0	99	-12	25.72	55	40	225	52	88	
Summit	Quincy	7017	45.0	86	4	22.02	216	40	210	45	110	Sacramento and San Joaquin Valleys
Tamark	Alpine	8000	39.4	82	-16	27.82	259	73	208	63	94	
Yosemite	Mariposa	3945	52.5	96	0	18.93	92	39	153	168	44	
Redding	Shasta	552	63.4	111	26	22.95	2	52	275	51	39	
Red Bluff	Tehama	307	63.2	110	24	14.16	0	42	255	56	54	
Orland	Glenn	254	63.8	114	27	9.92	0	43	238	50	77	Foothills, Sacramento and San Joaquin Valleys
Sacramento	Sacramento	71	60.7	107	26	8.92	0	32	267	52	46	
Stockton (S. H.)	San Joaquin	23	59.9	105	22	7.01	0	27	273	41	51	
Merced	Merced	173	61.2	108	21	5.33	0	27	271	34	60	
Fresno	Fresno	263	63.5	109	25	3.91	0	15	268	66	31	
Bakersfield	Kern	404	64.0	110	25	3.02	0	15	307	21	37	Sea Coast
Oroville (near)	Butte	250	62.5	109	21	17.31	0	38	241	30	94	
Nevada City	Nevada	2850	53.2	98	12	25.71	32	49	216	84	65	
Rocklin	Placer	249	57.6	108	18	13.25	0	25	276	16	73	
Placerville	El Dorado	1875	57.2	105	18	20.58	15	23	281	53	31	
Lemon Cove	Tulare	600	62.2	111	25	6.21	0	14	300	5	60	Southern California
Reedley	Fresno	347	62.2	109	23	4.74	0	94	97	112	156	
Eureka	Humboldt	64	50.5	82	27	28.73	0	56	136	77	152	
Point Reyes	Marin	490	56.3	90	32	8.34	0	42	221	82	62	
San Francisco	San Francisco	207	56.3	96	34	9.00	0	25	207	19	76	
Del Monte	Monterey	25	55.3	92	25	8.47	0	25	282	35	55	West of Coast Range
Santa Barbara	Santa Barbara	130	60.2	115	28	11.79	0	37	198	112	55	
San Diego	San Diego	87	60.8	92	39	8.04	0	28	213	101	51	
Los Angeles	Los Angeles	263	63.0	105	38	8.45	0	30	240	99	26	
Riverdale	Riverdale	851	64.2	118	28	5.46	0	27	106	236	23	
Escudido	San Diego	657	60.5	108	24	12.30	0	36	245	45	75	Southeastern California
Redlands	San Bernardino	1352	63.2	114	29	9.04	0	49	204	9	62	
Santa Rosa	Sonoma	181	55.8	111	23	15.49	0	48	248	65	52	
San Jose	Marin	2375	56.2	94	21	13.48	9	48	266	53	46	
Lick Observatory	Santa Clara	4209	54.2	91	15	15.85	9	36	237	77	51	
Hollister	Santa Clara	95	57.8	102	22	8.21	0	42	247	63	55	Southeastern California
San Benito	San Benito	284	56.7	103	22	9.17	0	31	279	39	47	
Los Gatos	Santa Clara	600	58.8	108	24	19.67	0	25	318	20	27	
Paso Robles	San Luis Obispo	800	58.7	115	18	8.14	0	10	287	55	25	
Ojai Valley	Ventura	900	62.1	119	23	11.04	0	11	293	37	17	
Indio	Riverside	-20	73.9	120	27	2.08	0	5	301	55	27	
Calverico	Riverside	0	71.0	117	30	1.64	0	5	200	37	12	
Mecca	Riverside	-185	71.8	124	26	1.06	0			54		



THE DEVELOPMENT OF AGRICULTURE IN CALIFORNIA

The remarkable growth of the State is shown by the following tables, giving the acreage of the most important crops in 1862, in 1910 and in 1917:

	1862 Agr. report acres	1910 Census report acres	1917 U. S. Crop Reporter acres
Indian corn.....	17,339	51,935	75,000
Wheat.....	361,351	478,637	375,000
Rye.....	1,415	7,027	.....
Oats.....	36,607	192,158	196,000
Barley.....	223,217	1,195,158	1,330,000
Potatoes.....	3,624	72,799	105,000
Hay.....	250,464	2,049,213	2,400,000
Total.....	894,017	4,046,927	4,481,000

To these figures should be added the following acreages as reported by the State Board of Equalization:

	1910	1916	1917
Hops.....	8,391	19,991	9,967
Celery.....	5,600	2,868	2,300
Beans.....	157,825	256,041	453,195
Standing alfalfa.....	487,134	862,534	1,007,554
Cotton.....	15,000	45,715	91,585
Sugar beets.....	101,000	144,200	140,138
Rice.....	.....	80,260	90,720
Totals.....	774,950	1,411,609	1,796,469

Besides this increase in acreage of the staple crops, California had, according to the reports of the State Board of Equalization, vines and fruit trees as follows, bearing and not bearing:

Vineyards

	No. of Acres	
	1910	1917
Table grapes.....	53,729	87,807
Raisin grapes.....	128,217	134,428
Wine grapes.....	160,573	165,669
	342,519	387,904

Orchards

Deciduous Fruits	No. of Trees	
	1910	1917
Apple.....	2,143,815	3,480,948
Apricot.....	2,593,884	3,912,829
Cherry.....	601,520	724,058
Fig.....	549,875	604,444
Nectarine.....	63,773	4,822
Olive.....	1,190,452	1,298,509
Peach.....	10,922,994	13,609,147
Pear.....	1,499,932	2,996,386
Plum.....	1,059,453	1,441,536
Prune.....	8,998,831	11,688,738
Total.....	19,624,529	39,761,417

CITRUS FRUITS

The season of 1916-17 was the year of heaviest shipments from California as a whole and a year of good prices. The total movement of citrus fruits as produced in California, shipped both eastbound and locally, amounted to the record figure of 54,361 cars.

Grapefruit, or more properly pomelos, are a material factor in the citrus culture of this State. They are a popular and profitable fruit and are coming more and more into prominence.

Statistics regarding production are usually included in the orange figures, but with their increasing importance they will, doubtless, soon be segregated and given a place by themselves.

Shipments of Citrus Fruits from California

Season (Nov. 1—Oct. 31)	CARS		
	Oranges	Lemons	Total
1900-01.....			24,900
1901-02.....			19,180
1902-03.....			23,871
1903-04.....	26,160	3,239	29,399
1904-05.....	26,044	5,378	31,422
1905-06.....	23,697	3,913	27,610
1906-07.....	26,313	3,507	29,820
1907-08.....	27,770	4,959	32,729
1908-09.....	34,320	6,196	40,516
1909-10.....	28,317	4,782	33,099
1910-11.....	39,630	6,764	46,394
1911-12.....	34,329	5,961	40,290
1912-13.....	15,893	2,192	18,085
1913-14.....	45,594	2,954	48,548
1914-15.....	39,744	7,068	46,812
1915-16.....	38,034	7,200	45,234
1916-17.....	46,447	7,914	54,361

The value of 1916-17 citrus fruit crop amounted to \$45,000,000.

Shipments of Citrus Fruits from Different Sections

	Season 1914-15 Cars	Season 1915-16 Cars	Season 1916-17 Cars
Oranges from Southern California.....	33,317	31,871	40,702
Oranges from Central and Northern California.....	6,427	6,163	5,745
Lemons from California.....	7,068	7,200	7,914
Total.....	46,812	45,234	54,361

California Lemon Production Will Be Doubled

The young non-bearing acreage in California is almost as great as the present bearing acreage, and when this comes into full bearing California alone will produce more lemons than the United States and Canada now consume. The latest available acreage figures furnished by The California Citrograph are as follows:

Present bearing acreage in California.....	21,946 acres
Present non-bearing acreage in California.....	18,573 "
Total lemon acreage in California.....	40,519 "
Present normal yield in California.....	8,000 carloads
Present normal imports.....	6,000 "

Yearly Supplies of Lemons

The following tabulation shows the total consumption of lemons in the United States and Canada with the quantity and percentage from California and abroad during the last four years. The Exchange fiscal year beginning September 1 is used in the computation, and 380 boxes figured to the car.

Sept, 1—Aug. 31st.	Imports	Calif.	Total	Cal. %
1913-14.....	8,095	2,856	10,951	26.1
1914-15.....	4,753	6,445	11,198	57.6
1915-16.....	4,348	7,209	11,757	61.3
1916-17.....	3,127	8,155	11,282	72.3

DECIDUOUS FRUIT IN CALIFORNIA

The last report of the State Horticultural Commission gives the acreage of deciduous fruit trees in 1917 as follows: Apple, 62,552; apricot, 58,436; cherry, 13,614; fig, 9,445; peach, 139,127; pear, 41,089; plum, 13,805.

The total production in 1917 can only be approximated. The three leading railroads report shipments of 24,425 carloads. In the table below the figures are for actual carloads, without regard to the number of tons in a car. The minimum fixed by the railway companies is thirteen tons to a carload, but a carload is often thirty tons. In bringing together figures from different sources, it should be borne in mind that some authorities use the ten-ton limit, while others count actual carloads. The following figures are supplied by "The California Fruit News," which is one of our most reliable sources of information:

Fresh Deciduous Fruit Shipments from North of Tehachapi, in Actual Carloads

Variety	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Apricots.....	231½	208½	289½	223½	195½	158½	382	392½	289½	403
Cherries.....	208½	249½	250½	216½	244½	230½	166½	205½	164	330
Grapes.....	3,816½	5,875	4,947½	6,374½	6,357½	6,363½	8,773	9,563½	9,722	13,746
Peaches.....	1,980½	2,599	2,517½	2,027	1,621½	2,359	2,144½	1,688½	1,909½	2,432
Pears.....	2,701½	2,638	2,361	2,324½	3,134½	2,459½	2,725½	2,645½	3,701	4,798
Plums.....	1,763	1,526½	1,552½	1,366	1,775½	1,706½	1,906½	2,224½	1,998½	2,651
Sundry.....		20½	17	16½	15½	18½	49	58½	106½	65
Apples (below).....	2,216									
Total carloads.....	12,917	13,117	11,936	12,548½	13,343½	13,331½	16,146½	16,778	17,801	24,425

Apples

It is shown by the report of the State Horticultural Commission that there are 39,602 bearing and 22,950 non-bearing apple trees in the State. Statistics from the U. S. Department of Agriculture show the total production of the State to be 5,592,000 bushels. The average price December 1, 1917, was \$1.15 per bushel.

According to the California Fruit News, the estimated dried apple output for 1917 amounted to 8,000 tons.

Pajaro Valley is the most important apple producing section of the State and according to Chief Apple Inspector A. W. Tate, Jr., 1,409 carloads of one thousand boxes each were shipped from that district to various parts of the State and 579 cars approximating 800 boxes to a car were shipped out of the State.

The Gold Ridge or Sebastopol District specializes on Gravensteins, to which, probably, three-fourths of the non-bearing acreage is planted. This apple is peculiarly adapted to this section and is ready for shipment from six weeks to two months earlier than the same variety produced in other sections of the United States and Canada. Shipments for 1917 were as follows:

Green apples	550 cars or 330,000 boxes
Dried apples.....	3,200 tons

THE AVOCADO

While the raising of avocados is still in its infancy, it promises to become a popular industry in the State. According to the report of the California Avocado Association there are approximately 25,000 budded trees in the State planted in orchard form. Of this number probably 15,000 are of what would be considered first class marketable varieties. The better known trees in the vicinity of Los Angeles bear from 400 to as high as 2,000 fruits each, which, when sold at the current prices of 50c to \$1.00 each, give a handsome income. Such returns must, however, be considered as exceptional and of little interest to the prospective planter. It should be stated, however, that at the present prices for fruit, an income of \$200 per tree would be considered ordinary.

There are approximately 35,600 trees in nursery stock of which 20,000 will be planted this year. Under present conditions large plantings of nursery stock is not possible because of the fact that Mexican seed can not be imported. Native grown seed is rapidly increasing and the development of the industry will not be seriously affected. It will be several years before the production of good avocados will begin to increase rapidly, as the newly planted orchards will not come into full bearing until that time, and there is no doubt but that the demand will increase with the supply. The avocado has the highest food value of any fruit cultivated, and is certain to become a standard commercial article, as the knowledge of its cultivation and use is extended.

Dates

Food chemists and medical experts agree that each acre of dates will feed more people than any other known crop, and in view of the fact that there are so few parts of the world where this crop is successfully grown, there seems to be no doubt but that the demand will always far exceed the supply.

In the ten years in which this crop has been grown in the Coachella Valley there has never been a crop failure, the fruit ripening to perfection and carrying a sugar content of from 54% to 70%, which insures its keeping indefinitely. There are now growing in Coachella Valley about 40,000 imported palms and nearly one million seedlings. About 100,000 pedigreed date seeds are being planted this season. The Deglet Noor palms often produce from 100 to 150 pounds per tree and the quality of the fruit and its sugar content surpasses the same variety grown in its original home in the oases of the Sahara and the entire crop finds a ready market at the standard price of \$1.00 per pound.

Imperial Valley is second in importance in this industry. According to Mr. B. Suryieh, of the Imperial Valley Investigation Station, climatic conditions of Imperial Valley permit of the perfect ripening of the palms of first-class packing dates, which are shipped to discriminating markets and have commanded such unqualified approval that it has been impossible to fill last season's orders. There are now growing in Imperial Valley 1,000 imported palms, and, according to Mr. F. W. Waite, Horticultural Commissioner of Imperial County, there are 26,550 seedlings, of which 1,090 are in bearing.

GRAPES, RAISINS AND WINE

Table Grapes

The principal localities in the State from which table grapes are shipped are the counties of Sacramento, Placer, El Dorado, San Joaquin, Merced, Madera, Stanislaus, Fresno, Kings, Tulare, San Diego and Imperial.

During the season of 1917, 16,564 cars of grapes were shipped to points outside the State. Of this total number, the State Viticultural Board makes the following classification:

Table grapes shipped in crated form.....	12,114 cars
Table grapes shipped in drums and kegs packed in redwood sawdust.....	450 "
Wine grapes shipped out of California in refrigerator and box cars.....	4,000 "

The total bulk of table grapes produced in the State in 1917 and shipped as such variety was 174,514 tons.

During part of the season carloads of table grapes sold as high as \$3,000, but this figure was unusual. Average prices ranged from \$1,400 to \$1,800 per carload.

It may be safely estimated that the table grape crop produced in the State and shipped in the form of crates and lug boxes totaled a selling figure of \$17,500,000. After deducting freight, refrigeration, selling expenses, loading, packing and the cost of crates there was a net return to the growers of \$8,000,000 for their grapes at the packing sheds. This amount, of course, was not net profit, as out of it comes the harvesting of the crop, the care of the vineyards throughout the year, taxes, depreciation, etc.

The Emperor grapes packed in sawdust averaged about \$2.75 per drum, f. o. b. California.

California Raisin Crop

The crop of raisins in the State during the season was tremendous. It exceeded the normal production by about 30,000 tons and the best estimates of the entire raisin production in the State aggregated 163,000 tons. This means more than 500,000 tons of fresh grapes which were dried, yielding the above tonnage of raisins. The market price for all of these raisins the past three months has made the raisin output of California for one season reach the aggregate selling figure of about \$25,000,000. The Muscat and Thompson's Seedless varieties, which constituted considerably more than half of the entire raisin crop, brought 9 cents per pound packed, while other varieties brought lower figures ranging downward two or three cents. The selling price, however, must have averaged about 8 cents per pound and thus the value of one raisin crop in the State reached the total in dollars above mentioned.

Not only does California supply practically the entire raisin consumption in the United States, but it also exports raisins in large quantities and in a year like the present when there are comparatively no importations of Zante currants from Greece, the state of California caters exclusively to the demand in the United States.

The production in the State segregated by varieties and by counties is given in the following tabulation:

County	QUANTITY IN TONS				
	Muscats	Thompsons	Sultanas	Malagas, Black Grapes and Fehrzagos	Total
Fresno.....	81,500	30,000	6,250	6,000	123,750
Kings.....	11,000	350	575	100	12,025
Tulare.....	9,000	6,500	3,100	1,500	20,100
Kern.....	750	200	.....	.....	950
Madera.....	1,000	150	25	250	1,425
Merced.....	10	350	15	150	525
Stanislaus.....	.....	150	25	.....	175
Sutter.....	75	2,000	10	.....	2,085
Yolo.....	.....	800	.....	.....	800
San Bernardino.....	315	.....	500	.....	815
San Diego.....	350	.....	.....	.....	350
Total.....	104,000	40,500	10,500	8,000	163,000

California Raisin Crop, 1899-1917

Year	Tons	Year	Tons
1899.....	35,784	1908.....	60,000
1900.....	47,167	1909.....	70,000
1901.....	37,125	1910.....	56,000
1902.....	54,375	1911.....	67,500
1903.....	60,000	1912.....	85,000
1904.....	37,500	1913.....	65,000
1905.....	43,750	1914.....	90,000
1906.....	47,500	1915.....	124,000
1907.....	60,000	1916.....	128,500
		1917.....	163,000

Wines and Brandy

The total production of wine in the State for the vintage season of 1917 was approximately 36,600,000 gallons. This production was less than the production of 1916 by about 5,500,000 gallons. The shortage was in both the sweet and dry types of wine. Sweet wines fell short of the 1916 production by over 2,500,000 gallons and the dry wine output was less by 3,000,000 gallons. The shortage is more than accounted for by the shipment out of the State to eastern markets of 4,000 cars of wine grapes during the 1917 season, together with light crops in some of the wine-producing sections as well as the imposition by the Government of a fortifying tax on sweet wines three times the tax of the previous year.

Wine and Brandy Production, 1899-1917

Year	Dry Wines Gals.	Sweet Wines Gals.	Brandy Gals.
1899.....	15,103,000	8,330,000	1,699,035
1900.....	16,737,260	6,940,300	3,256,513
1901.....	16,473,731	6,270,300	1,688,482
1902.....	28,224,146	14,835,146	4,564,173
1903.....	21,900,500	12,670,356	1,972,000
1904.....	15,589,342	13,571,856	4,420,839
1905.....	20,000,000	10,700,000	1,750,000
1906.....	26,000,000	15,000,000	1,250,000
1907.....	27,500,500	15,500,000	1,345,000
1908.....	22,500,000	14,750,000	1,500,000
1909.....	27,000,000	18,000,000	2,000,000
1910.....	27,500,000	18,000,000	2,500,000
1911.....	26,000,000	23,280,044	2,000,000
1912.....	22,500,000	17,797,781	1,799,539
1913.....	25,000,000	17,307,600	1,695,406
1914.....	22,000,000	16,620,212	3,320,744
1915.....	21,571,000	4,035,240	2,613,286
1916.....	23,000,000	19,262,475	3,027,892
1917.....	20,020,000	16,585,508	5,042,836

To produce this quantity of sweet wine in the State during 1917, it required the crushing of approximately 200,000 tons of grapes. The aggregate sum paid to the growers of these grapes was \$2,750,000.

The grapes required to produce brandy for commercial use prior to the suspension of such production on October 4, 1917, totaled 34,500 tons, yielding the growers of such grapes approximately \$518,000.

The report of the State Board of Viticultural Commissioners estimates the 1917 vintage of dry wines as 20,020,000 gallons.

It required 148,000 tons of grapes to produce this amount of wine and the purchase price ranged from the low figure of \$15 per ton to the maximum figure of \$35 per ton.

The price paid for these wine grapes which were sent out of the State ranged from \$16 to \$22 per ton; and when these were disposed of in the East, the delivered price was in the neighborhood of \$60 per ton.

The production of champagne in California is increasing year by year and in last year's output approximately 200,000 gallons of dry wine were used.

The fame of California champagne is fast spreading and the output in the State for the season of 1917 is estimated at 65,000 cases of about three gallons each.

There was made in this State during 1917 about 60,000 gallons of unfermented grape juice requiring about 400 tons of grapes. Competition is found difficult and the market is not active for the California article.

Export of Wine by Sea

Year	Cases	Gallons	Number of Countries Receiving
1909		7,440,294	23
1910		9,866,539	26
1911	11,535	15,125,375	32
1912	11,388	13,238,223	33
1913	6,933	12,935,239	24
1914	11,636	10,461,526	31
1915	10,417	8,530,047	25
1916	2,124	1,663,666	30
1917		2,091,951	33

In 1917 the shipment of wine out of California by sea in bulk amounted to 2,091,951 gallons valued at \$980,615. With the exception of England and Denmark, all of this wine went to our neighbors in the South and Central American republics or countries bordering on the Pacific.

Hawaii continued to be the best over-sea customer, although Japan ran her a close second. The Hawaiian importations amounted to 562,520 gallons, while Japan's orders totaled 479,437 gallons. French Oceania, which has heretofore been supplied by the mother country, last year used 217,974 gallons of wholesome California wines. China increased her imports 25 per cent and the Philippines again doubled their gallonage. Mexico imported 102,215 gallons and Panama, 140,615. Guatamala, Honduras, Salvador, Nicaragua, Costa Rica, Colombia, Ecuador, Peru and Bolivia are all becoming enthusiastic consumers of California wines. Cuba, which relied upon Spain in the past, is using more California wines each year. In 1916 the first real trial was given our vintages, the importations amounting to 20,726 gallons. In 1917 the supply ordered was 35,641 gallons.

Other countries that enjoy California wines are Korea, the British, Dutch, French and Portuguese East Indies, Straits Settlements, British India, Siam, Australia, British and German Oceania, Samoa, Guam, Canada and Alaska.

There were no shipments of wine by sea to New York, but the exports to eastern points by rail (including about 82,500 cases of wine) amounted to 32,498,272 gallons, which is a big increase when compared with the 24,758,613 gallons shipped in 1916.

NUTS

1917 Almond Crop

The 1917 almond crop is conservatively estimated at 4,000 tons, which is by far the heaviest tonnage of almonds produced in California. The crop per acre was exceedingly light in most sections, several districts reporting a complete failure. The increase in tonnage is due to the many acres of young orchard now coming into bearing.

The market for 1917 was generally satisfactory, the greatest trouble being experienced in the matter of transportation. Cars shipped in October which should arrive in the eastern markets in November in plenty of time for the holidays were delayed en route by the congested condition of the railroads, with the result that quite a percentage of the crop did not arrive in time for Christmas.

Prices were fairly well maintained, however, and the members of the California Almond Growers Exchange received a return of: Nonpareil, 17½¢; I X L, 16¢; Ne Plus,

15c; Drake, 12½c, and Languedoc, 12c. These prices are net, that is, all selling expenses, bags, freights, etc., being deducted.

The demand for almonds is constantly increasing, and it is estimated that production will increase from an average of 3,500 tons annually to 10,000 to 12,000 tons annually when the present non-bearing acreage is producing.

California produces all of the almonds grown commercially in the United States.

The importation of almonds during 1916-17 amounted to: shelled, 18,413,225 pounds; not shelled, 5,010,833 pounds—an increase of 5,827,137 over 1915-16 imports.

Almond and Walnut Production 1896-1917

Year	Almonds Tons	Walnuts Tons	Year	Almonds Tons	Walnuts Tons
1896.....	1,605	4,115	1907.....	750	7,400
1897.....	2,375	3,985	1908.....	2,900	9,200
1898.....	450	5,650	1909.....	1,500	9,350
1899.....	2,320	5,530	1910.....	3,300	9,600
1900.....	2,740	5,30	1911.....	1,450	12,500
1901.....	1,500	6,900	1912.....	3,000	11,250
1902.....	3,270	8,570	1913.....	1,100	11,350
1903.....	3,200	5,500	1914.....	2,250	8,900
1904.....	800	7,590	1915.....	3,500	14,825
1905.....	2,100	6,400	1916.....	3,400	14,600
1906.....	750	7,000	*1917.....	4,000	15,000

*Estimated.

The Walnut Industry in California

The production of so-called English walnuts in California, and particularly in the counties of Santa Barbara, Ventura, Los Angeles, Orange, and Riverside has become one of the important industries of the State. The output of the crop of unshelled walnuts has increased from 15,096,887 pounds in 1907 to 30,810,000 pounds in 1917, while the shipments of shelled walnuts or walnut meats has also developed quite recently to very large proportions. Five years ago California shelled walnuts were an unknown product. It has only been through the recent development and perfection of mechanical appliances for shelling the walnuts that this development of the industry has been made possible. Over 1,500,000 pounds of shelled walnuts were shipped from the State the past season. The excellent grades of walnut meats produced in California are all taken from the off-grade or cull walnuts, which formerly were more or less of a waste product of the groves, but by the careful grading out of such kernels as are sweet and merchantable, a very high grade pack of shelled walnuts is made possible.

The f. o. b. value of the 1917 California walnut crop was \$6,044,600 for the unshelled nuts, and \$865,000 for the shelled nuts. Over 75% of the walnut growers in the State are affiliated with the California Walnut Growers Association, which is a purely coöperative organization marketing the output of its over 2,000 members at actual cost to them. Government statistics show that within the past two years the average price to the consumer of the average food product has advanced over 100%, while the average price of California walnuts has advanced but 25% over the past five years' average. California walnuts are now distributed and sold in practically every town and village in the United States. Even the walnut shells that are the refuse of the shelling plants find a ready market and are used in the manufacture of explosives.

There are approximately 62,000 acres planted to walnuts in California, of which 44,981 are now bearing.

THE OLIVE INDUSTRY

Olive culture is one of the oldest fruit industries of California. The first grove was planted in San Diego in 1769, and that county is still a large producer of olives and olive oil. Each year shows increased plantings, there now being thirty-seven

counties ranging from San Diego in the south to Shasta in the north, in which there are more than 1,000 trees. The number of trees in the spring of 1917, as reported by the State Board of Equalization, were 816,302 bearing and 482,207 non-bearing, divided as follows:

	Bearing	Non-bearing		Bearing	Non-bearing
Butte.....	55,000	200,000	Fresno.....	49,255	2,110
Riverside.....	110,720	40,240	Santa Barbara.....	38,180	2,500
San Bernardino.....	59,000	12,900	San Diego.....	33,290	6,120
San Joaquin.....	45,144	17,908	Los Angeles.....	11,428	20,155

It is interesting to note, however, that Butte County has 200,000 non-bearing trees, the largest number of any county in the State.

Statistics are difficult to obtain, but this industry is becoming more attractive and remunerative, and the removal of competition with adulterated oil by the Pure Food regulations has given an impetus to planting new trees. It is estimated that the annual production of olive oil amounts to 1,000,000 gallons and 300,000 cases of packed olives of six gallons to the case.

For 1916-17, the figures given by the "California Fruit News" shows an importation of 7,533,149 gallons of oil and 5,641,753 gallons of olives.

Among the largest olive groves reported in the State is that of Sylmar (near Los Angeles) with 1,200 acres under one management, and a 2,000-acre tract near Porter-ville.

The California ripe olive has rapidly come into favor. During the year 1914-15 it appeared on the market in a form known as the dehydrated olive, which has become very popular. In 1916 still another form appeared under the name of the Greek Olive, which is a ripe olive cured by a salt process similar to that used in Greece. Owing to the fact that the importation of this article is entirely cut off on account of the European war, the California product finds a ready market among the Greek and Turkish residents of the United States, by whom it is largely consumed.

It is interesting to note that the three largest ripe olive packing plants in the world are located in Butte County, California. A process which enables ripe pickled olives to be shipped without liquid of any kind, thus saving the freight charges and making them easier to handle, has been contributed by the University of California.

Prunes

Next to raisins (the figures for which are given on another page under the heading of grapes), prunes are most important in the list of dried fruits. While they are grown commercially in about one-half of the counties of the State, Santa Clara and Sonoma Counties lead in production. The State Board of Equalization reports 5,633,900 bearing, 467,000 non-bearing trees in Santa Clara County and 395,570 bearing, 540,180 non-bearing trees in Sonoma County. The value of the 1917 crop has been roughly estimated at \$10,000,000.

CALIFORNIA PRUNE OUTPUT, 1900-1917.

Year	Tons	Year	Tons
1900.....	87,000	1909.....	77,500
1901.....	40,800	1910.....	45,000
1902.....	98,500	1911.....	88,000
1903.....	82,500	1912.....	97,000
1904.....	67,500	1913.....	45,000
1905.....	31,250	1914.....	56,000
1906.....	92,500	1915.....	92,500
1907.....	53,000	1916.....	78,000
1908.....	28,500	1917 (estimated).....	109,000

Output of Cured Fruits, including Prunes and Raisins

("California Fruit News")

	1912 Tons	1913 Tons	1914 Tons	1915 Tons	1916 Tons	1917* Tons
Apples.....	3,600	1,900	4,500	4,000	4,500	8,000
Apricots.....	20,000	10,500	20,500	19,500	11,000	16,000
Figs.....	5,000	5,000	6,500	8,600	9,900	8,600
Peaches.....	30,000	23,000	37,000	32,000	30,000	38,000
Prunes.....	102,500	48,000	56,000	92,500	78,500	109,000
Raisins.....	95,000	65,000	98,000	127,000	132,000	157,500
Various other.....	3,000	2,000	2,500	2,000	3,000	4,000
Total tons.....	259,100	155,400	225,000	285,600	268,900	341,100

*Estimated.

THE CANNING INDUSTRY IN CALIFORNIA

California Fruit Canning Season

(J. K. Armsby Co.)

Approximate Period of Packing the Different Varieties.

Apricots.....	Latter part of June to latter part of August.
Blackberries.....	Latter part of June to fore part of September.
Cherries.....	Latter part of May to middle of July.
Currants.....	Last three weeks of June.
Gooseberries.....	Latter part of May to latter part of June.
Grapes.....	Fore part of September to end of October.
Nectarines.....	Latter part of July to fore part of September.
Pears.....	Latter part of July to latter part of September.
Peaches, Free.....	Latter part of July to middle of October.
Peaches, L. C.....	Latter part of July to middle of October.
Peaches, W. C.....	Middle of August to middle of October.
Plums, Green Gage.....	Middle of July to middle of September.
Plums, Egg.....	Middle of July to middle of September.
Plums, Golden Drop.....	Fore part of August to fore part of September.
Plums, Damson.....	Latter part of August to latter part of October.
Quinces.....	Middle of September to middle of November.
Strawberries.....	Fore part of May to latter part of October.

VEGETABLES IN CALIFORNIA

No other State in the Union and few other countries in the world offer such a variety of fresh orchard and garden products throughout the year as does California. In one or another section of the State, fresh fruits and vegetables of superior quality are to be had in every month of the twelve. "The Garden Calendar," by Prof. E. J. Wickson, shows that as far north as Red Bluff, conditions admit of planting for market eight kinds of vegetables in November, five in December, ten in January, eleven in February, fourteen in March, eighteen in April, and every month has something in the list, the smallest being August with four kinds.

Complete statistics are not available, there being no accurate data with regard to the amount of fresh vegetables supplied to the home markets. The shipments of fresh vegetables to eastern markets in 1917 amounted to about 157,097 tons.

Principal Vegetable Districts

Asparagus.....	Delta Region, Los Angeles, Alameda.
Cabbage.....	Los Angeles, San Francisco, San Jose.
Cauliflower....	Los Angeles, San Francisco and Alameda.
Celery.....	Los Angeles, San Francisco, Stockton.
Melons.....	Los Angeles, Stockton.
Potatoes.....	Delta Region, Los Angeles, San Francisco and Alameda.
Tomatoes.....	Los Angeles, Delta Region, Alameda.
Onions.....	San Jose, San Francisco, Delta Region and other points.
Artichokes.....	Los Angeles, San Jose and other points.
Lettuce.....	Los Angeles, San Jose and other points.
Rhubarb.....	Alameda, Sacramento Valley, San Joaquin Valley, Central California.

Vegetable Production in California During 1917

Through valuable information furnished us by R. G. Risser, Assistant Truck Crop Specialist of the Bureau of Crop Estimates, U. S. Department of Agriculture, we are able to make a much more comprehensive report on the vegetable situation in California than we have done in previous years.

In 1917 there were 9,000 acres planted to Fall onions in California, 8,100 of which were in the Delta region. The total production for the State was 3,546,000 bushels. This brought California to first place in onion production.

There were 1,500 acres of Bermuda onions planted in Coachella and Imperial Valleys in 1917.

Of tomatoes for canning, 23,735 acres were planted in 1917 and the total production amounted to 178,012 tons. This was second to Maryland in tonnage, but the average yield per acre was more than twice as great, being 7.5 tons per acre in California, and 3 tons for Maryland.

The following tabulations show the amount of land planted to various crops and general distribution:

Artichokes.....	3,700 acres in San Mateo County.
Rhubarb.....	700 acres in Alameda County.
Brussels Sprouts.....	400 acres in San Mateo County.

Celery

The California Vegetable Union estimates the celery output at 2,500 cars. Prices ranged from 25c to 30c a dozen, according to quality, with an average of 27½c, making \$345.00 per car net to the growers, which is a little lower than the last year's price on account of the heavy supply in this State, the large eastern crops which came into competition with the California production during the early part of the season, and the rigid railroad service during the latter part of the season, on account of cold weather, snow blockades and embargoes.

Celery	1916-17	1917-18
Contra Costa County.....	1,602	2,075
Sacramento County.....	995	967
San Joaquin County.....	655	840
Los Angeles County.....	900	1,200
Orange County.....	150	200
Scattering.....	150	200
	4,452	5,482

Cauliflower and Broccoli (acres)

Cauliflower and Broccoli	1916-17	1917-18
Los Angeles County.....	3,200	4,800
Orange County.....	40	100
Imperial County.....	15	165
San Mateo County.....	1,100	1,600
Alameda County.....	90	300
Scattering.....	130	150
	4,575	7,115

Lettuce

Lettuce	1916-17	1917-18
Los Angeles County.....	2,100	3,600
Orange County.....	125	200
Imperial County.....	960	2,500
Riverside County.....	30	150
Sacramento County.....	200	175
Yolo County.....	175	150
	3,590	6,775

Besides the above tabulation there were planted in California during 1917: 4,250 acres of onions for seed production, 3,600 acres of watermelons, 19,423 acres of early potatoes, 3,050 acres of peas for canning, and 925 acres in Imperial County of peas for shipment.

The Garden Grove Chili Association report on the chili pepper situation as follows:

Pimientos or Sweet Peppers.....	4,000 tons
California Long Green Pods, canned.....	900 "
California Long Red Evaporated.....	225 "
California Mexican Pods Evaporated.....	310 "

These figures are for Southern California where the bulk of this crop is produced.

CALIFORNIA VEGETABLE CANNING SEASON

(J. K. Armsby Co.)

Approximate period of packing the different varieties.

Asparagus.....	Latter part of March to middle of June.
String beans.....	Middle of June to end of November.
Peas.....	Middle of May to latter part of June.
Tomatoes.....	Latter part of August to latter part of November.

POTATOES IN CALIFORNIA

From the Government Crop Report the following interesting figures are taken on potato production in California.

The acreage in 1917 in California shows an increase of 30,000 acres, being 105,000 in 1917 and 75,000 in 1916. The yield, however, shows a decided increase, the 1917 figures being 15,225,000 bushels against 10,575,000 for 1916. What will be of decided interest to the consumer, however, is the increase in price. In 1916 potatoes sold at \$1.40 per bushel of 60 lbs. while the price in 1917 was \$1.50.

The following table shows how potato production is distributed over the State:

Delta District.....	44,000 acres @ 80 sacks	3,520,000 sacks
Salinas District.....	3,360 acres @ 60 sacks	201,600 sacks
Watsonville District.....	2,160 acres @ 75 sacks	162,000 sacks
San Francisco District.....	5,000 acres @ 50 sacks	250,000 sacks
Los Angeles District.....	10,000 acres @ 55 sacks	550,000 sacks
Balance of State.....	15,480 acres @ 60 sacks	928,800 sacks

That this State does not produce enough potatoes for local consumption is evident as we import approximately 1,500,000 sacks of potatoes during the year.

This crop, figuring it on a basis of \$1.50 per bushel, the average price for 1917, added \$22,838,000 to the wealth of the State.

Mr. T. A. Burns, of the San Francisco Fruit Distributors, gives the following figures for sweet potatoes and onions:

Sweet Potatoes.....	75,000 crates, value \$1,500,000.00
Onions.....	1,300,000 sacks, value \$2,600,000.00

Beans and Lima Beans

The following tables were taken from the Annual Edition of the Western Canner and Packer:

1916			1917		
	Sacks	Amount		Sacks	*Amount
Limas.....	2,000,000	\$ 8,800,000	Limas.....	1,400,000	\$11,200,000
Black Eye.....	150,000	510,000	Black Eye.....	375,000	2,200,000
Large White.....	400,000	2,560,000	Large White.....	570,000	5,016,000
Small White.....	500,000	3,600,000	Small White.....	750,000	7,050,000
Bayos.....	125,000	600,000	Bayos.....	115,000	828,000
Pink.....	750,000	3,300,000	Cranberry.....	135,000	1,134,000
Cranberry.....	150,000	690,000	Pink.....	1,200,000	8,640,000
Various.....	100,000	.....	Various.....	257,000	1,644,800
	4,175,000	\$20,060,000		4,802,000	\$37,712,800

*Rough estimate.

Partial List of Vegetable Crops, 1917

Beans, bags.....	4,802,000	\$37,712,800
Sugar beets, tons (paid growers, estimated).....	1,318,400	10,000,000
Onions, bags.....	1,300,000	2,600,000
Potatoes, Irish, bushels.....	15,225,000	22,838,000
Potatoes, sweet, crates.....	750,000	1,500,000

SHIPMENTS OUT OF STATE BY RAIL OF FRUITS, WINE, BRANDY AND VEGETABLES

Tons of 2,000 Pounds.

Kinds	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910 By rail	1911 By rail	1912 By rail	1913 By rail	1914 By rail	1915 By rail	1916 By rail	1917 By rail
Green deciduous fruits.....	98,673.7	100,390.9	101,198.7	73,983.6	115,083.6	113,679.0	106,066.0	161,224.0	205,276	204,876	187,984	167,603.9	186,393	212,806	264,155	311,471	351,726
Citrus fruits.....	323,871.4	225,668.8	299,632.4	385,747.6	454,083.4	383,418.9	413,696.1	399,094.0	475,959	446,384	580,790	479,098.8	238,222	561,136	561,087	559,328	660,747
Dried fruits.....	106,987.1	151,944.5	149,531.1	156,769.3	118,479.3	112,176.9	194,821.6	133,946.0	154,756	128,892	114,463	194,175.2	111,783	93,014	169,739	174,988	231,286
Raisins.....	43,314.0	47,575.2	39,903.4	54,124.7	32,634.7	42,457.3	.....	29,610.0	61,594	67,278	46,513	.....	39,279	47,688	71,023	80,083	134,670
Nuts and olives.....	8,462.4	10,918.9	9,377.4	9,810.5	7,610.5	5,131.5	7,198.0	10,887.5	12,438	12,308	12,751	15,399.1	11,611	9,622	18,766	22,640	19,113
Canned fruits and vegetables.....	82,229.1	80,634.8	94,204.8	86,077.9	91,877.9	77,626.5	104,624.6	85,135.0	71,223	73,746	82,268	89,946.1	106,998	65,245	115,178	362,895	314,731
*Fresh vegetables.....	.....	.....	.....	.....	.....	.....	.....	93,500.8	86,014	78,899	130,736	129,659.6	147,277	247,512	331,941	351,265	235,757
Wine and brandy.....	.....	.....	.....	.....	.....	.....	.....	70,753.2	75,656	82,144	83,962	92,249.8	83,012	53,085	52,276	148,550	172,082

*These figures represent shipments on the Southern and Western Pacific Railways only, as the Santa Fe made no report on vegetable shipments in 1917.

Carloads 10 Tons Each

Total carloads fresh, dried and canned fruits and vegetables and wines and brandy.

1898.....	56,149	1906.....	99,409	1912.....	116,913
1899.....	55,483	1907.....	90,587	1913.....	92,457
1900.....	66,798	1908.....	95,299	1914.....	129,010
1901.....	83,732	1909.....	98,604	1915.....	158,415
1902.....	77,538	1910.....	120,990	1916.....	201,122
1903.....	86,095	1911.....	109,456	1917.....	212,010
1904.....	92,063		116,267		

The figures for 1912-17 were reported by the Southern Pacific, Santa Fe and Western Pacific lines. Previous to 1912 the figures reported were from the Southern Pacific and Santa Fe only.

Lack of uniformity in classification of some kinds of products by the several roads prevents their segregation more specially in this table. For instance, in some cases "dried fruits" are made to include prunes and raisins to comply with the economics and methods of account of the freight offices.

Previous to 1910, shipments of fruits, vegetables, etc., by rail and sea were not segregated. The pack of canned fruits and vegetables is given on another page.

CALIFORNIA CANNED FRUIT AND VEGETABLE PACK—LAST YEAR LARGEST ON RECORD

(Copyright, 1918, by Howard C. Rowley, publisher "California Fruit News." Published by permission from issue of "California Fruit News" of April 27, 1918.)

	1917 Cases			1916 Cases			1915 Cases		
	No. 2½, 3 and smaller (all grades)	Gallons, 6 to case (all grades)		No. 2½, 3 and smaller (all grades)	Gallons, 6 to case (all grades)		No. 2½, 3 and smaller (all grades)	Gallons, 6 to case (all grades)	
Fruits—									
Apples.....	22,155	249,383	.....	15,820	197,705	.....	3,050	78,570	.....
Apricots.....	1,532,724	823,829	.....	937,800	389,970	.....	703,550	277,640	.....
Blackberries.....	46,503	116,838	.....	35,845	126,585	.....	41,595	128,340	.....
Cherries.....	388,167	51,967	.....	140,560	28,225	.....	155,680	27,070	.....
Grapes.....	62,124	23,367	.....	80,965	20,165	.....	66,480	11,130	.....
Loganberries.....	48,672	62,421	.....	26,865	30,565	.....	11,913	26,646	.....
Pears.....	654,277	103,865	.....	930,550	102,260	.....	749,200	78,430	.....
Peaches, free.....	936,400	617,993	.....	838,150	364,790	.....	502,875	329,000	.....
Peaches, cling.....	2,796,265	811,303	.....	2,105,550	491,840	.....	1,891,100	516,550	.....
Plums.....	186,388	83,664	.....	61,005	23,745	.....	66,585	28,630	.....
Raspberries.....	12,987	3,647	.....	9,325	9,115	.....	3,430	1,630	.....
Strawberries.....	24,378	3,136	.....	11,025	3,015	.....	4,997	5,640	.....
Other fruits.....	230,815	101,877	.....	20,340	20,195	.....	7,475	13,960	.....
Total fruits.....	6,941,855	3,053,290	.....	5,213,800	1,808,175	.....	4,207,930	1,523,236	.....
Grand total fruits (cases).....	.....	.....	9,995,145	.....	.....	7,021,975	.....	.....	5,731,166
Vegetables—									
Asparagus.....	940,651	25,057	.....	975,700	15,040	.....	790,900	18,960	.....
Beans, string.....	134,083	35,243	.....	95,150	28,235	.....	65,590	32,630	.....
Peas.....	431,230	41,440	.....	195,410	31,710	.....	167,935	41,464	.....
Tomatoes.....	2,588,041	758,063	.....	2,067,800	579,500	.....	1,021,325	322,760	.....
Tomato products.....	657,398	699,357	.....	.....	.....	.....	.....	.....	.....
Other vegetables.....	491,938	145,268	.....	152,725	83,800	.....	93,400	52,250	.....
Total vegetables.....	5,243,341	1,704,428	.....	3,486,785	738,285	.....	2,139,150	468,064	.....
Grand total vegetables (cases).....	.....	.....	6,947,769	.....	.....	4,225,070	.....	.....	2,607,214
Grand total pack (cases).....	.....	.....	16,942,914	.....	.....	11,247,045	.....	.....	8,338,380

FIELD CROPS

Grain Crops

The acreage devoted to grain in California (with the exception of barley) has been rapidly falling off year by year, for the reason that the large ranches formerly devoted exclusively to grain have been rapidly subdivided and planted to more profitable crops. California is the leading barley producing State in the Union with the production in 1917 of 39,150,000 bushels. This exceeds the next highest state production by 1,350,000 bushels. Wheat follows with 7,425,000 bushels. Oats is the third grain in importance with 6,860,000 bushels. Corn, fourth, with 400,000 bushels.

Fluctuation in Grain Production

The following table from the records of the U. S. Department of Agriculture shows the yearly production of the four principal grain crops in the State since 1900 and of rye since 1907:

Year	Wheat bushels 60 lbs.	Barley bushels 48 lbs.	Corn bushels 56 lbs.	Oats bushels 32 lbs.	Rye bushels 60 lbs.
1900.....	20,933,333	19,769,760	1,351,975	1,477,771	.....
1901.....	28,751,500	26,162,780	1,850,793	4,887,374	.....
1902.....	18,759,490	23,489,065	1,839,150	5,148,583	.....
1903.....	14,880,990	21,075,000	1,777,162	5,756,964	.....
1904.....	10,895,216	24,418,604	1,350,000	5,250,000	.....
1905.....	5,660,360	22,094,186	1,204,000	4,735,000	.....
1906.....	8,333,330	26,162,790	1,100,000	4,300,000	.....
1907.....	10,833,330	25,096,666	1,100,000	4,100,000	1,250,200
1908.....	11,680,000	25,427,000	1,600,000	6,700,000	792,000
1909.....	11,550,000	31,270,000	1,740,000	6,280,000	842,000
1910.....	17,100,000	43,400,000	1,838,000	8,325,000	986,000
1911.....	8,640,000	40,600,000	1,836,000	7,140,000	136,000
1912.....	6,270,000	41,760,000	1,924,000	7,800,000	141,000
1913.....	4,200,000	33,150,000	1,815,000	6,636,000	120,000
1914.....	6,800,000	42,060,000	2,160,000	7,700,000	136,000
1915.....	7,040,000	39,440,000	2,624,000	6,963,000	112,000
1916.....	5,600,000	33,320,000	2,048,000	6,500,000	104,000
1917.....	7,425,000	39,150,000	2,400,000	6,860,000	.....

California Grain Crops in 1917

The following figures are taken from the U. S. Monthly Crop Reporter:

	Acreage	Bushels	Farm Value
Barley.....	1,350,000	39,150,000	\$46,980,000
Wheat.....	375,000	7,425,000	14,850,000
Oats.....	196,000	6,860,000	5,831,000
Corn.....	75,000	2,400,000	4,440,000

It appears from Department reports that wheat, formerly the most important agricultural product of the State, has gradually given place to barley.

The malting qualities of California barley give it a ready market abroad.

Oats are raised, in some parts of the State, more for hay than for threshing, while corn is but little used as feed for work animals. Barley has long been the main grain feed in California, but of late years oats have come into use to quite an extent. The non-saccharine sorghums are also important in this respect.

The San Francisco Chamber of Commerce reports that 54,643 centals of wheat, 890,782 centals of barley, 59,080 centals of oats, 22,843 centals of corn and 635,273 barrels of flour were exported by water from San Francisco last year.

According to the State Board of Equalization the leading grain producing counties are as follows: Barley—Colusa, 180,000 acres; San Joaquin, 170,000; Solano, 160,000; Monterey, 150,000; Yolo, 131,885; Merced, 125,000; Wheat—Solano, 150,000 acres; San Luis Obispo, 75,000; Tehama, 61,780; Colusa, 40,000. Oats—Sacramento, 40,000 acres; San Joaquin, 25,000; Stanislaus, 20,813. Corn—Imperial, 79,935 acres; Kern, 21,000; Merced, 10,000, and Stanislaus planted 12,000 acres to Egyptian Corn. Rye—Merced, 10,500 acres; Modoc, 6,500; Lassen, 2,000; Stanislaus, 2,000.

HAY AND FORAGE

The hay crop of California is one of its most valuable agricultural products. The census returns for the crop of 1909, a fair year, gave the yield at 4,327,130 tons, valued at \$42,187,215. These returns were as follows:

Crop	Farms reporting	Acres harvested	Quantity Tons	Value
Timothy alone.....	370	13,725	20,001	\$185,579
Timothy and Clover mixed.....	958	46,661	73,183	629,575
Clover alone.....	703	8,519	20,380	213,289
Alfalfa.....	19,904	484,134	1,639,707	13,088,530
Millet or Hungarian grass.....	101	2,142	2,688	27,483
Other tame or cultivated grasses.....	2,274	90,414	119,415	1,253,428
Wild, salt or prairie grasses.....	3,679	253,127	281,033	2,028,494
Grains cut green.....	39,397	1,604,745	2,019,526	24,056,727
Coarse forage.....	2,175	25,868	60,611	438,095
Root forage.....	1,021	4,012	90,586	266,015

The total acreage sown to hay amounted to 2,400,000 acres in 1917 as compared with 2,500,000 acres in 1916. The total yield of all hay in 1917 amounted to 4,560,000 tons as compared with 4,375,000 in 1916. The average price per ton in 1917 was \$19.20 as compared with \$12.60 in 1916, making a total value of the crop \$87,552,000 as compared with \$55,125,000 in 1916.

California grain cut in the milk is highly prized for hay and is sent East by the trainload for feeding racehorses.

Dairying and hog-raising in connection with alfalfa growing is becoming one of the leading industries of the State, being one that is within reach of the man with comparatively small capital.

The State Board of Equalization reported 1,007,554 acres of standing alfalfa in 1917. The 1917 production of alfalfa amounted to 2,237,000 tons. The acreage is steadily increasing and five cuttings may be made yearly on irrigated land, with an average of six tons per acre.

THE BEET SUGAR INDUSTRY

It is almost forgotten now that the beet sugar industry of the United States originated in California, at Alvarado in Alameda County.

The campaign of 1912-13 in California with 1,612 acres produced 980,894 tons of beets, with a sugar output of 155,432 tons of sugar, giving the State second place, next to Colorado. According to the United States Crop Reporter there were 154,700 acres of beets planted in 1917 and 1,318,400 short tons of beets harvested. The sugar content of beets grown in California is greater than any other State, having 15.18 per cent and they accordingly bring higher prices, the California beet selling this year for \$7.52 per ton. The American Beet Sugar Company reports that the production of beet sugar in California for the season of 1917 amounted to 4,157,181 bags of 100 lbs. each, and the estimated value was \$29,308,126.

The following is a list of beet sugar factories in the State:

Factory	Location	County
American Beet Sugar Co.....	Oxnard	Ventura
American Beet Sugar Co.....	Chino	San Bernardino
Anaheim Sugar Co.....	Anaheim	Orange
Alameda Sugar Co.....	Alvarado	Alameda
Holly Sugar Co.....	Huntington Beach	Orange
Los Alamitos Sugar Co.....	Los Alamitos	Orange
Pacific Sugar Corp.....	Tracy	San Joaquin
Pingree Sugar Co.....	Corcoran	Kings
Sacramento Valley Sugar Co.....	Hamilton	Glenn
San Joaquin Valley Sugar Co.....	Visalia	Tulare
Santa Ana Co-Operative Sugar Co.....	Santa Ana	Orange
Southern California Sugar Co.....	Santa Ana	Orange
Spreckels Sugar Co.....	Spreckels	Monterey
Union Sugar Co.....	Betteravia	Santa Barbara

The leading beet sugar counties according to the report of the State Board of Equalization are as follows: Orange, 26,000 acres; Monterey, 22,000; San Joaquin, 15,000; Ventura, 13,500; San Luis Obispo, 10,000.

The plant at Spreckels in Monterey County is said to be the largest beet sugar factory in the world.

RICE

Among the potential crops of California none has advanced with such sturdiness as rice. In 1909, through the efforts of the Sacramento Valley Development Association, the attention of the United States Department of Agriculture was directed to the prospective adaptability of the soils of the great interior valleys of the State to rice culture. A small experimental farm produced splendid samples and for a period of three years ever increasing and more favorable results were achieved by the government and private parties, until in 1912 there was planted in the aggregate 1,200 acres, giving a yield of 3,500,000 lbs., with a market value of approximately \$75,000.

Since the inception, as it may well be called, of commercial rice culture in the year last mentioned, immense strides have been made and the State is safely listed now by the Government as a rice producer. Climatically the southern sections of California might be considered the more ideal for successful growing of this tropical water plant, but the lack of water, in undoubted quantity, and under gravity system, impels the practical rice planter to seek the field where water can be applied to the soil in quantity, and in the most economical manner. This condition is found in its highest state of feasibility in the northern section of the Sacramento Valley, the rice section being more centrally located in the counties of Glenn, Butte, Colusa, Yuba, Sutter and Yolo counties—with 90 per cent of the State's rice areas. In Fresno, Tulare, Kern in the San Joaquin Valley and in Imperial Valley, on the extreme southern border of the State, the remainder of the rice crop is raised with a promise of larger plantings in these sections with the development of a gravity water supply. An attempt is being made to propagate it as far north in the Sacramento Valley as Shasta County.

When it is noted that the acreage in 1917 was about 85,000, yielding an average in excess of 30 sacks of 100 pounds each to the acre, with a monetary value, in the aggregate of \$11,000,000, the advance in five years of rice as a commercial factor in California may well be established. But, when to this statement is added the information that there will be an increase of possibly 40 per cent in acreage with a corresponding yield, the stability of the industry may not be lightly questioned.

With the increase in interest taken by pioneers in the rice field, should be mentioned the efforts they are making to produce earlier maturing varieties—varieties that may be harvested before the early rains that are apt to occur in the first days of September. It is believed that one new rice, imported from Japan, will ripen at least 30 days ahead of the regular season, and about 8,000 acres have been planted in the Glenn and Butte sections to this variety. There are also some fancy kinds being tried out, specially propagated by the wizard of the Southern plantations, Sol. Wright. Yields from two of these varieties, known as the Early Prolific and Edith, brought 25 cents per hundred pounds higher at the mills than the ordinary Japanese berries.

It is probable that a large mill will be erected in Sacramento this year, making rice mills in operation in California, as follows:

Rice Mills	Capacity per day
Pacific Rice Mills, Biggs.....	4,000 bags paddy rice
Pacific Rice Mills, San Francisco.....	3,500 " " "
C. E. Grosjean Rice Milling Co., San Francisco.....	3,500 " " "
M. J. Brandenstein & Co.....	3,500 " " "
Growers Rice Milling Co., South San Francisco.....	3,500 " " "
M. Phillips & Co., San Francisco.....	3,500 " " "
Rosenberg Bros. & Co., Gridley.....	2,400 " " "
Globe Grain & Milling Co., Woodland.....	3,000 " " "
Natoma Milling Co., San Francisco.....	1,600 " " "
Golden West Rice Milling Co., Oakland.....	1,200 " " "
Kanesan Co., San Francisco.....	860 " " "
Arnold & Garrett, Biggs.....	1,200 " " "

Southern millers have recently shown much interest in the California grain, and as a consequence nearly one million sacks were sold to their buyers before the California miller came into the market.

While the cost of rice culture has risen nearly 100 per cent, the steadiness of the market under Government supervision is permitting a safe return for the grower. In 1916 rice could be placed in the warehouse by the planter at about \$40 per acre. Close figures from some of the largest growers in 1917, placed their cost of operation at from \$65 to \$90 per acre.

FIBRES

Cotton

The growing of cotton in California is not a new industry so far as Imperial Valley is concerned, but the movement commenced at Fresno and the formation of the California Central Valleys Egyptian Cotton Association has a potential import. It is believed by cotton experts that the San Joaquin and Sacramento Valleys have the lands and climatic conditions that will place cotton in the same category as rice.

An authority on crop production states that the San Joaquin Valley within the next five years will be producing \$10,000,000 worth of cotton. The promoters of the industry will insist that only the long staple variety be planted, and possibly 2,000 acres in the San Joaquin Valley and 1,500 acres in the Sacramento Valley will be planted to the Yuma variety this year. Ultimately, the Pima will be the only variety grown in these valleys because of its superiority over all others, but there is no seed available this season. Incidentally 100,000 acres are being planted in Arizona to the long-staple cotton this season. The demand for this type is tremendous, the Government and tire manufacturing companies being lamentably short in supply.

Long-staple cotton is now averaging 70c per pound, and it is more than possible that the price will reach as high as \$1.00 per pound. At present prices this variety of cotton will return to the planter upwards of \$150 net per acre. It should be stated that the cotton planting this year is not in the nature of an experiment, only so far as the labor is concerned, the soil and climatic conditions having been proven.

According to statistics compiled by the U. S. Bureau of Crop Estimates, there were 117,000 acres planted to cotton in California for the season of 1917. This is more than double the acreage of 1916, which amounted to 52,000 acres, while that of 1915 was but 39,000 acres. Yield per acre for the 1917 season showed a decided decrease. Figures for 1917 give an average of 275 pounds per acre; 1916, 400 pounds per acre; 1915, 380 pounds per acre. While the yield is considerably less than that of past years, this still is the highest yield per acre of any State in the Union. Louisiana ranks second with 218 pounds per acre.

The total production for 1917 amounted to 67,000 bales as against 44,000 bales for 1916 and 29,000 bales for 1915.

The average price per pound for 1917 was 28 cents; 1916, 20 cents, while for 1915 11.2 cents was the average price.

The total farm value of the cotton crop for California was in 1917, \$9,380,000; 1916, \$4,362,000; 1915, \$1,599,000.

The average value of the crop per acre was in 1917, \$77; 1916, \$80; 1915, \$42.56. The state ranking second in value of crop per acre was South Carolina, where the 1917 crop was valued at \$58.22.

Ability to control the moisture supply furnishes a distinct advantage in favor of irrigated land. The average yields so far have been much higher than the average in the South, although not so high as at first anticipated. It is apparent that the yields of short cotton will have to exceed a bale to the acre on the average on irrigated land to make a profit, because of the added cost of water, irrigation attendance, high prices of labor and land generally obtaining in irrigated sections.

Wool Production of California

According to the United States Crop Reporter for January, 1918, the total number of sheep in the United States was 48,900,000. The average price to producers for unwashed wool averaged during 1917 about 47.2 cents per pound as compared with 27.6 cents in 1916, and 22.8 cents in 1915.

The same report credits California with the production of 1,850,000 fleeces at an average weight of 6.3 pounds each, making a total of 11,600,000 pounds. The average price paid for wool in this State in 1917 was 47 cents per pound, which would make the value of the wool crop \$5,475,200.

Year	Pounds	Year	Pounds
1873.....	32,155,169	1896.....	27,195,550
1874.....	39,356,781	1897.....	34,882,325
1875.....	43,532,223	1898.....	28,063,240
1876.....	56,550,973	1899.....	28,332,090
1877.....	53,110,742	1900.....	27,750,000
1878.....	40,862,091	1901.....	26,900,000
1879.....	46,903,360	1902.....	21,000,000
1880.....	46,074,154	1903.....	22,000,000
1881.....	45,076,639	1904.....	22,000,000
1882.....	40,529,119	1905.....	22,000,000
1883.....	40,848,690	1906.....	24,000,000
1884.....	37,415,330	1907.....	15,000,000
1885.....	36,561,390	1908.....	15,000,000
1886.....	38,509,160	1909.....	16,000,000
1887.....	31,564,231	1910.....	15,500,000
1888.....	32,569,972	1911.....	14,000,000
1889.....	34,008,370	1912.....	13,500,000
1890.....	34,854,640	1913.....	12,000,000
1891.....	33,183,475	1914.....	11,480,000
1892.....	35,802,930	1915.....	11,590,000
1893.....	33,169,375	1916.....	11,600,000
1894.....	36,968,400	1917.....	11,600,000
1895.....	35,856,690		

NOTE—"Pulled" wool not included in table.

FLAX AND HEMP

The culture of these valuable textile plants has lately received an impetus in several localities which promise important developments. The soil in some places along the Sacramento and San Joaquin Rivers is suitable for producing a fine quality of hemp. The California Cotton Mills of Oakland buy nearly all the hemp grown in this State, which is manufactured into twine of various kinds, for all of which there is a market in the State.

It is even claimed that a better quality of hemp is being grown in California than anywhere else in the world. When properly handled after harvesting, it produces from 1,500 to 1,800 pounds per acre of long, clean, silky fibre, selling at from 15 to 18 cents per pound. It is one of the easiest of all crops to grow, requiring nothing except preparation of the soil and seeding; no cultivation is necessary. The harvesting is a simple matter and the machinery required for turning out a ton of fibre a day is not expensive and can be operated by two men. It is probably only a question of a short time until this important fibre industry will receive much more attention.

SILK

Climatic conditions are admirably adapted to the raising of silk worms, although this industry has not yet been placed on a commercial basis. The season of production extends over a period of six or eight months, while in Europe it lasts only as many weeks. Government authorities have made favorable reports on California silk, stating that it was suitable for the manufacture of the finest fabrics and was not excelled by the European product. The fact that this State would necessarily come into direct competition with Oriental labor conditions has retarded the growth of the industry

materially, but this has been somewhat obviated by the introduction of a filature machine of the latest model, which was imported by the Ladies' Silk Culture Society of California from Italy for demonstration purposes at the P. P. I. E. By this device one person is able to do the work of eight hand operators, which will tend to greatly reduce the cost of production.

THE HOP INDUSTRY

The hop acreage in California, as in other parts of the United States, varies greatly from year to year; if a partial failure of the crop elsewhere sends the price skyward, the following year brings large plantings. Under normal conditions the acreage is fairly consistent.

The last report of the State Board of Equalization gives the total acreage of hops in 1917 as 9,967, ten counties being listed. Sonoma 2,990, Sacramento 2,500 and Yolo with 1,260 acres are the three principal hop-producing counties in the State. Alameda, Butte, Lake, San Joaquin, Shasta, Tehama, Yolo and Yuba Counties reported more than one hundred, but less than two thousand acres.

The principal fields are in the Sacramento Valley, where a failure has never been known and where the quality of the hops closely matches that of the New York and European varieties. The following tables show the extent of the industry:

Hop Production in California

Year	Bales	Pounds	Year	Bales	Pounds
1902.....	53,500	10,165,000	1910.....	71,511	13,229,535
1903.....	57,000	10,545,000	1911.....	93,981	17,367,985
1904.....	63,000	11,655,000	1912.....	117,770	21,198,600
1905.....	.....	13,135,000	1913.....	120,000	22,200,000
1906.....	108,000	20,000,000	1914.....	100,000	18,500,000
1907.....	90,000	16,650,000	1915.....	115,000	21,275,000
1908.....	63,200	11,692,000	1916.....	116,500	22,277,500
1909.....	69,688	12,892,280	1917.....	85,000	*15,300,000

*Estimated.

E. Clemens Horst gives the following interesting history of the hop industry in California:

"Up to 1808, hop culture was confined almost exclusively to three New England States, Massachusetts, Vermont and Maine, but owing to the poor soil conditions the industry rapidly spread to New York State, which soon had a monopoly on this industry.

"In 1860 the hop plant immigrated westward to Wisconsin and Michigan, and in 1866, when the New York State crop was totally destroyed by vermin, the hop growers of Wisconsin received fabulous prices for their excellent product until their crop was likewise destroyed.

"During the decade 1870 to 1880, New York once more enjoyed a monopoly on hop growing, but by that time fresh competition developed on the Pacific Coast. The hops grown in Sacramento County were a revelation, "fine as silk" in texture, bright in color, clean picked and second only to the best German hops in richness of lupulin.

"Hop production spread to Sonoma, Mendocino, Yolo, Yuba and Tehama Counties, till today California is the principal hop-producing State. The hops are excellent in quality and the rich new soil of Sacramento County produces enormous crops, in one or two well attested instances, reaching the almost incredible yield of 3,000 lbs. per acre and with an average yield per acre of more than twice that of New York State.

"In 1862 hops sold in excess of \$1.00 per pound. In 1886 the entire crop of New York State was destroyed by lice, while the California crop was uninjured, and the hop farmers of this State made enormous profits on their crops. Hop lice cannot live in the climates of the California hop-producing counties.

"It is safe to say that now the whole territory of the United States has been tested for hop growing. The culture of hops has settled down at last to New York State, California, Oregon and Washington. The present crop of New York and Washington will average forty to forty-five thousand bales of 100 pounds in each State. Oregon is capable of producing between ninety and one hundred and twenty thousand bales, while California produces a steady annual average crop of approximately 110,000 bales.

The 1917 hop crop has been estimated at 85,000 bales of 180 pounds net. This crop sold at prices ranging from 12 to 35 cents per pound. The average price of California hops today is about 17½ cents per pound net to the growers.

Owing to the abnormal advance in price of all foodstuffs, and the enactment of laws harassing brewing interests in California and eastern states, there has been a gradual decline in hop acreage, with the result that this coming season the California hop crop will probably not exceed 50,000 bales. A large portion of the acreage has been plowed out and will be planted to vegetables which are to be evaporated in the large driers formerly used for hops.

THE BREWING INDUSTRY

The number of breweries operating in the State at the present time is approximately sixty, representing an investment aggregating \$50,000,000.

According to official internal revenue reports, California breweries manufactured last year 1,542,000 barrels of beer, being an increase of 200,000 barrels over the preceding year.

The increase in internal revenue tax, which went into effect the latter part of last year, will make the tax to be paid by California brewers to the United States Government, for the year 1918, in excess of \$4,500,000 as against \$2,000,000 for the preceding years.

Recent Federal ruling, reducing the alcoholic contents of beer to a maximum of 2¾% by weight, and permitting the use of only 70% of the brewing material formerly used, will reduce the consumption of barley by California breweries to about 56,000,000 pounds, and rice to 15,000,000 pounds.

Last year's consumption was:

Barley.....	80,000,000 pounds
Rice.....	21,000,000 "
Hops.....	1,079,000 "

DAIRY, LIVESTOCK AND POULTRY

The Dairy Industry

Owing to the fact that alfalfa grows the year round, yielding from nine to ten tons per acre, California is becoming one of the leading dairy states in the Union and this industry offers one of the greatest money-making possibilities in the State.

While the production of butter in 1917 showed a marked decrease, there was a corresponding increase in the production of cheese, the total output for 1917 amounting to 9,236,663 pounds as against 7,745,124 pounds for 1916. Santa Clara leads all other counties with 1,567,305 pounds; Monterey was second with 1,336,727 pounds. This is a reversal of places for these two counties, Monterey leading in 1916 and Santa Clara being second. The total value of the cheese output amounted to \$1,827,012.

The Report of the State Dairy Bureau shows the total value of all dairy products has increased \$7,925,002 in the last year, the figure for 1916 being \$40,310,105, and for 1917, \$48,235,107.

Annual Value of Dairy Products of State

1915	
Butter, 67,549,409 pounds.....	\$19,386,680
Cheese, 6,249,775 pounds.....	881,218
Condensed, evaporated and powdered milk, 16,579,317 pounds.....	1,352,959
Casein, 690,750 pounds.....	34,537
Market milk, cream and ice cream.....	12,000,000
Calves produced on dairies.....	3,000,000
Skim milk and buttermilk.....	1,750,000
Total.....	\$38,405,394

1916	
Butter, 70,030,174 pounds.....	\$19,181,264
Cheese, 7,745,124 pounds.....	1,203,592
Condensed, evaporated and powdered milk, 18,610,226 pounds.....	1,488,818
Casein, 1,864,317 pounds.....	186,431
Market milk, cream and ice cream.....	14,000,000
Calves produced on dairies.....	2,500,000
Skim milk and buttermilk.....	1,750,000
Total.....	\$40,310,105

1917	
Butter, 68,373,021 pounds.....	\$25,345,879
Cheese, 9,236,663 pounds.....	1,827,012
Condensed, evaporated and powdered milk, 25,631,560 pounds.....	2,771,654
Casein, 3,603,750 pounds.....	540,562
Market milk, cream and ice cream.....	14,500,000
Calves produced on dairies.....	2,000,000
Skim milk and buttermilk.....	1,250,000
Total.....	\$48,235,107

Irrigation and the Dairy Industry

Irrigation has played a most important part in the development of the dairy industry in California, as is shown by the census reports. Many of the now leading dairy counties in the State were twenty-five years ago immense wheat fields, but with the coming of irrigation and intensive agriculture this condition has been materially changed.

The following is a list of the principal butter-fat-producing counties, both irrigated and non-irrigated, each of which shows a production of over one million pounds for the year:

Counties	1916	1917
Butte.....	2,073,297	1,172,774
Del Norte.....	.....	1,381,980
Fresno.....	4,204,416	4,672,397
Glenn.....	1,725,746	1,794,092
Humboldt*.....	5,588,604	5,729,882
Imperial.....	6,780,552	6,245,487
Kern.....	.....	1,015,301
Kings.....	3,960,949	4,165,315
Marin.....	2,475,329	2,458,548
Merced.....	4,028,062	4,239,748
Sacramento.....	1,422,051	1,398,385
San Joaquin.....	1,618,455	1,576,357
San Luis Obispo.....	2,303,547	2,733,303
Sonoma*.....	3,071,474	3,391,401
Stanislaus.....	9,980,021	8,935,964
Sutter.....	1,048,270	1,085,662
Tulare.....	4,677,839	4,086,695
Yolo.....	1,241,083	1,014,706

*Non-irrigated.

Production of Butter (Pounds)

Year	Creamery method	Old method	Totals
1896.....	10,097,323	21,508,117	31,605,440
1897.....	10,866,646	17,811,793	28,678,439
1898.....	10,410,479	13,280,549	23,691,028
1899.....	12,725,814	12,143,270	24,869,084
1900.....	16,486,695	12,296,164	28,782,859
1901.....	19,017,512	10,713,370	29,730,882
1902.....	21,593,021	9,935,741	31,528,763

Since 1902 the total production has increased as follows:

Year	Pounds	Year	Pounds
1903.....	34,676,311	*1911.....	50,380,736
1904.....	35,636,909	*1912.....	54,940,886
1905.....	41,961,047	*1913.....	55,542,709
1906.....	44,044,578	*1914.....	59,286,460
1907.....	44,599,211	*1915.....	67,549,409
1908.....	48,469,585	*1916.....	70,030,174
1909.....	49,595,869	*1917.....	68,373,021
1910.....	45,819,741		

*Reported by State Dairy Bureau.

CHEESE

Owing to war conditions the importation of many varieties of cheese has been entirely cut off and to meet the demand several large factories have been established for the manufacture of Parmesan, Edam and the Swiss types. It has been demonstrated that Cheddar cheese of the finest quality can be made in this State and finds a ready local market.

Following are the totals for the past fifteen years:

Cheese Production, 1902-1917

Year	Pounds	Year	Pounds
1902.....	6,503,441	1910.....	4,648,348
1903.....	7,218,639	1911.....	4,580,495
1904.....	6,133,898	1912.....	4,785,617
1905.....	6,020,672	1913.....	5,600,972
1906.....	6,418,480	1914.....	6,016,815
1907.....	5,928,942	1915.....	6,249,775
1908.....	6,162,514	1916.....	7,745,124
1909.....	5,931,194	1917.....	9,236,663

Out of the 58 counties in the State 43 produced cheese during the year 1917. Santa Clara has taken first rank with a total output of 1,567,305 pounds for the year.

Counties Producing Over 300,000 Pounds of Cheese in 1917

County	Pounds	County	Pounds
Santa Clara.....	1,567,305	Sonoma.....	362,805
Monterey.....	1,336,727	Del Norte.....	349,520
Fresno.....	617,000	San Mateo.....	335,534
Sacramento.....	561,648	Santa Cruz.....	330,958
Stanislaus.....	479,351		

DAIRY IMPORTS AND EXPORTS

No butter was imported into this State during the year 1917 until late in the fall when the following shipments were received in San Francisco: November 6, 192,100 lbs.; November 27, 196,700 lbs.; December 18, 123,700 lbs. Two shipments were received in January of this year (1918): January 8, 308,000 lbs.; January 29, 158,900 lbs. All of this butter came from Australia.

Two hundred and sixty thousand pounds of California Cheddar cheese were exported to the eastern states during March, April and May of 1917, and 144,000 pounds of Cheddar cheese were shipped to Honolulu and the Orient, while 544,000 pounds of Edam and other fancy cheeses were exported from this State.

Butter in San Francisco

	1915-1916		1916-1917	
	Pounds	Price Cents	Pounds	Price Cents
October.....	1,921,100	26.90	1,881,000	32.88
November.....	1,732,400	28.59	1,856,000	34.58
December.....	1,832,500	27.36	1,900,000	34.42
January.....	1,790,600	28.00	1,388,200	36.50
February.....	1,766,200	30.54	1,668,400	37.59
March.....	2,468,600	28.02	2,378,400	35.09
April.....	3,404,000	26.24	3,045,400	37.50
May.....	3,259,000	24.78	3,354,600	35.50
June.....	3,066,000	24.94	2,685,300	36.20
July.....	2,212,500	26.00	1,847,400	38.78
August.....	2,283,800	26.83	1,731,300	42.11
September.....	2,141,000	30.56	1,626,500	43.77
Total.....	27,877,700	27.39 Aver. price	25,362,500	37.07 Aver. price

Cheese in San Francisco

	1915-1916		1916-1917	
	Pounds	Price Cents	Pounds	Price Cents
October.....	869,200	16.46	1,231,400	16.58
November.....	748,000	16.68	1,150,100	16.79
December.....	828,700	16.04	921,700	16.94
January.....	767,700	16.40	698,700	18.04
February.....	707,800	17.33	684,700	19.89
March.....	946,200	17.94	994,800	20.67
April.....	1,276,600	15.14	1,049,600	20.70
May.....	1,626,000	12.82	1,533,400	21.84
June.....	1,865,400	14.58	1,248,400	21.20
July.....	2,100,800	14.09	1,591,500	19.76
August.....	1,612,400	14.23	1,394,500	22.34
September.....	1,111,800	14.75	1,088,000	22.66
Total.....	14,460,600	15.54 Aver. price	13,586,000	19.78 Aver. price

Condensed, Evaporated and Powdered Milk

Owing to the tariff changes, the condensed and evaporated milk industry has been somewhat unsettled during the past few years. As was quite natural to suppose the manufacturers of this State could not compete successfully with those of foreign countries and prices dropped accordingly. This condition, however, has been greatly changed. Because of the existing abnormal conditions prices have advanced and there is a ready

market for California brands. Growth of this branch of dairy production during the past five years is indicated by the following table:

	Cases
1913.....	172,800
1914.....	274,096
1915.....	345,402
1916.....	379,212
1917.....	506,095

The 1917 production amounted to 25,631,560 pounds valued at \$2,771,654, as against 18,610,236 pounds valued at \$1,488,818 for 1916.

Goat Milk Production

California can boast of having the first and only Evaporated Goat Milk plant in the world. The industry is less than two years old and today supplies goat milk in cans throughout the United States. The demand far exceeds the supply.

The operating company owns the largest herd of goats in America—approximately 6,000 head. The ranch and dairy is located at Pescadero in San Mateo County, about forty-five miles from San Francisco. The condensing plant is located at Pigeon Point (on the coast) near the ranch. In addition the company is installing a plant for manufacturing sugar of milk from cows' milk.

The value of goats' milk has long been recognized by the medical profession for both infants and invalids, as the animal is practically immune from tuberculosis and the milk is easily digested by the most delicate person. Some difficulty has been experienced in the procuring of fresh goats' milk and this industry seems to be filling a long-felt need and promises to become one of considerable importance in the State.

The Three Leading Dairy Counties

According to the last report of the State Dairy Bureau, whose figures are for the year ending September 30, 1917, the following are the three counties which lead in butter production: Stanislaus and Imperial under irrigation, and Humboldt County under non-irrigation.

The following tables have been furnished by the leading commercial organizations in these counties:

Stanislaus County

Article	Weight Pounds	Value
Butter fat and sweet cream.....	9,025,323	\$3,856,520
Cheese.....	480,000	101,184
Buttermilk.....	7,435,824	7,435
Condensed milk.....	52,560	
Evaporated cream.....	4,150,000	127,500
Total.....	21,143,707	\$4,092,639

Imperial County

Article	Weight Pounds	Value
Butter.....	6,000,000	.....

About 25,000,000 pounds of skim milk was utilized in the manufacture of casein, milk albumen and milk sugar in 1917. The manufacture of albumen and milk sugar is a new industry and was begun towards the end of 1917. Skim milk utilized as above cost the creameries from 40c to 50c per hundred pounds. Some cream is now sold outside the county. Production of cheese, according to the report of the State Dairy Bureau, amounted to 270,270 pounds.

Humboldt County

Article	Weight Pounds	Value
Butter.....	5,691,916	\$2,366,700
Butter fat.....	111,500	59,000
Cheese.....	97,111	25,000
Condensed milk.....	8,353,261	680,070
Dry milk.....	1,821,096	269,080
Casein.....	2,242,986	246,760
Totals.....	18,317,870	\$3,646,610

These figures cover shipments from the county only, and do not include the amount consumed locally.

HOGS

According to the U. S. Crop Reports issued February 1st, 1918, there were 974,000 hogs in the State of California as against 994,000 at the same date in 1917; while the number had materially decreased, the value showed a marked increase. The average price of hogs during 1917 was \$17.50 per head against \$10.10 per head for the previous year.

The total value of all hogs in the State amounted to \$17,045,000 as against \$10,039,000 for 1916.

Commenting upon the marked decrease, the President of the California Swine Breeders Association estimates that 30% of the sows available for breeding in California in 1917 were slaughtered. This condition has been brought about by the high prices of feed and uncertainty of the markets. However, since the minimum price for the Pacific Coast markets has been established by the Federal Food Administration it is anticipated that hog production will greatly increase. A decided effort is being made on the part of all swine breeders to bring about this increase during the late farrowing season.

THE POULTRY INDUSTRY

The farm value of poultry and eggs produced in California is about \$35,000,000. The leading poultry districts of the State north of Tehachapi are divided as follows:

Sacramento Valley District, comprising the counties of Sacramento, Napa, Placer, Tehama, Butte, Solano and such other counties in the Sacramento Valley or adjacent thereto as may not be specifically included in either of the districts mentioned below.

San Joaquin Valley District, comprising the counties of Stanislaus, San Joaquin, Merced, Madera, Fresno, Kings and Tulare.

Santa Cruz District, comprising the counties of Santa Cruz, Monterey and such other adjoining counties as may not be specifically included in some other district mentioned herein.

Alameda County District, comprising the counties of Alameda and Contra Costa.

Santa Clara and San Mateo Counties District, including San Benito County and the City and County of San Francisco.

Sonoma County District, comprising the counties of Sonoma, Marin, Mendocino and Humboldt.

The industry is constantly extending, as the demand for poultry products greatly exceeds the home supply. Turkey-farming, as it is called, is mainly in the grain districts where the fowls can range. Hatching by incubators prevails generally.

An average chicken ranch consists of about five acres, upon which are placed 500 to 3,000 hens. There are, of course, quite a number of larger ranches which maintain 5,000 to 30,000 chickens. A person should have from \$3,000 to \$5,000 to equip a chicken ranch and get ready for a profitable business. In case of renting, however, about \$1,500 is needed to start the prospective poultryman. The average profit on each hen is about \$1 per year.

Notwithstanding the remarkable development of the poultry business in various parts of the State, the increase is not sufficient to meet the demands of the immediate market, and several hundred carloads of live and dressed poultry beside several million dozen eggs are each year imported from eastern points to supply the local demand. This fact insures the success of all practical poultrymen who engage in the industry in California.

Petaluma is the principal shipping point of Sonoma County and has the advantage of a very low freight rate to San Francisco. The market business done from that point, and its growth, are reflected in the following figures:

For the last three years this district has shipped about 10,000,000 dozen eggs, but the production of 1917 exceeded that of any other year by 2,450,000 dozen, while the poultry shipment decreased 15,850 dozen.

According to Mr. A. Schofield, President of the Poultrymen's Co-operative Milling Association of Los Angeles, there was a shrinkage of from twelve to fifteen per cent compared with the number of hens last year in the Southern District, comprising the eight counties south of Tehachapi. In February there were less than sixty per cent of the usual number of chicks placed in the brooders, but so far as the commercial poultry ranchers are concerned, there is the usual number of chicks going in for the months of March and April.

The stationary prices of feed together with a good price for storage packed eggs in the Los Angeles market, has greatly encouraged the poultrymen to provide the usual number of young chicks, and as a result there will be but a small decrease in the number of laying hens the coming fall.

Figures taken from the Pacific Dairy Review show that from January 3rd, 1917, to March 21st, 1918, there were received in the San Francisco market 903,697 cases of eggs of 30 dozen each.

The average price paid for eggs in the San Francisco market during that time was 48.63 cents per dozen.

NUMBER AND VALUE OF FARM ANIMALS

Kinds	1915			1916			1917		
	No.	Avg. Price	Value	No.	Avg. price	Value	No.	Avg. price	Value
Horses.....	493,000	\$96.00	\$47,328,000	468,000	\$97.00	\$45,396,000	468,000	\$ 98.00	\$45,864,000
Mules.....	70,000	110.00	7,700,000	70,000	116.00	8,120,000	66,000	115.00	7,590,000
Milch cows.....	568,000	69.00	39,192,000	591,000	67.00	39,597,000	597,000	72.50	43,282,000
Other cattle.....	1,558,000	36.30	56,555,000	1,636,000	38.10	62,332,000	1,701,000	42.10	71,612,000
Sheep.....	2,450,000	5.00	12,250,000	2,524,000	6.70	16,911,000	2,776,000	11.30	31,369,000
Hogs.....	947,000	8.40	7,955,000	994,000	10.10	10,039,000	974,000	17.50	17,045,000
Total.....	6,086,000	.....	\$170,980,000	6,283,000	.....	\$182,395,000	6,582,000	.....	\$216,762,000



BEEF CATTLE

HONEY

According to the thirteenth United States Census, California is the banner honey-producing State of the Union, the output being three times as great as her nearest competitor, Texas.

The total honey crop for the State for 1917 was 296 carloads, or a total of 8,900,000 pounds. Of this amount 280 carloads were extracted honey, which brought the producer about 9 cents per pound, and 16 carloads of comb honey valued at 14 cents per pound, making the total value for the year \$952,200. If the value of beeswax and queen-bees sold, were added to this figure it would total \$1,000,000 of bee products for 1917. Although the total output for the year was one-twentieth less than that for 1916, beekeepers realized fully three-fifths more in price for their 1917 products. The increased use of honey for local consumption over the previous year was considerable. For 1916 only 14% of the State's production was used locally, whereas during 1917 the local consumption rose to 23%, the balance of the honey finding its way into outside markets.

While honey is produced for the market in all of the principal valleys, the great bulk of the commercial product comes from the southern counties and from the San Joaquin Valley. The Sacramento Valley and the counties north are rapidly developing into first-class bee territory. The leading honey-producing counties are Ventura, Los Angeles, San Diego, Riverside, Imperial, and Fresno. In fact, these six counties produce the bulk of the output of the entire State.

About four-fifths of the honey produced in the State is of first and second quality, being produced principally from the sages, alfalfa, oranges, wild buckwheat, wild alfalfa and other excellent honey plants.

Through the efforts of the California State Beekeepers' Association and the State Commission Market there is being formed the California Honey Producer Co-operative Exchange, the purpose of which is to market bee products and to purchase bee supplies collectively for its members. A co-operative exchange such as contemplated is indispensable to the beekeepers of the State.

CALIFORNIA'S WATER-POWER RESOURCES

Closely connected with the future of manufacturing development are the fuel and the water-power supply capable of being converted into electrical power. The statistics of the State's wonderful oil production, given on another page, show the abundance of cheap fuel. The following extract from Water Supply Paper No. 234, in the report of the U. S. Geological Survey, shows that the development of hydro-electric power has only begun.

California's Water-Power, 1909

Developed			Undeveloped		
Source	Wheels	Horse-power		Minimum	Maximum Development
Sacramento River.....	576	280,735	Sacramento River.....	2,420,000	4,580,000
San Joaquin River.....	159	86,224	San Joaquin River (including Tulare Lake drainage).....	759,000	3,140,000
Minor streams, southern..	74	50,183	Minor streams, northern	600,000	1,200,000
Minor streams, northern..	176	25,440	Sierra Nevada drainage	132,000	202,000
Sierra Nevada drainage..	74	17,737	Minor streams, southern	36,400	88,300
San Francisco Bay.....	11	6,455			
Totals.....	1,070	466,774	Totals.....	3,947,000	9,210,300

It is calculated that the hydro-electric development since that date has raised the aggregate to 693,905 horse-power. The steam-electric plants are estimated at 400,000 horse-power—somewhat over a million horse-power in all.

The following table, compiled from data supplied by Mr. F. H. Fowler, District Engineer of the U. S. Forest Service, illustrates the speed of recent development:

Hydro-Electric Plants in California

Year	No. of Plants	K. W.	Capacity equal H. P.	Year	No. of Plants	K. W.	Capacity equal H. P.
1892.....	1	480	643	1905.....	50	100,115	134,216
1893.....	2	1,230	1,649	1906.....	54	122,285	163,894
1894.....	2	1,230	1,649	1907.....	58	161,465	216,441
1895.....	4	5,730	7,681	1908.....	67	238,985	320,355
1896.....	7	8,190	10,978	1909.....	69	248,285	332,808
1897.....	9	12,440	10,978	1910.....	71	293,095	392,889
1898.....	15	20,715	27,768	1911.....	71	298,595	400,261
1899.....	19	27,175	36,427	1912.....	72	308,295	413,264
1900.....	20	28,695	38,478	1913.....	78	420,045	563,063
1901.....	23	38,015	50,958	1914.....	79	436,045	584,511
1902.....	27	51,565	69,122	1915.....	76	434,900	582,750
1903.....	33	65,075	87,232	1916.....	75	461,560	615,669
1904.....	41	88,465	118,586	1917.....	80	517,840	693,905

The above figures include not only the hydro-electric plants actually in California but several small plants which are just over the line in Oregon and Nevada, and which are attached to hydro-electric transmission systems partly in California. In addition to the figures given, which represent water-power plants alone, there were at the end of 1917 thirty-six steam-electric auxiliary plants on the above systems.

The following is taken from an address delivered by Mr. John A. Britton, who is a leading authority on this subject:

The State of California can claim the honor of having been the pioneer in hydro-electric development. The first plant operated in the State followed closely the first one operated in the world, which was at Frankfort-on-the-Main in 1894, and the first commercial hydro-electric high-tension transmission in the State was the plant erected in the town of Folsom and supplying the city of Sacramento; this occurred in the year 1895. The voltage of the line was 11,000; the fall of water 56 feet. Today developments are in operation carrying on lines as high as 150,000 volts, and operating at heads of over 2,000 feet, or at a pressure of approximately 875 pounds per square inch.

California has not hitherto been classed among the States in which manufactures was a leading industry, but with abundant oil for fuel for manufacturing power and motive-power on the one side, and 9,000,000 horse-power in water-power maximum development and a widening of markets both at home and in the Orient, California can face its industrial future with confidence.

California Hydro-Electric Plants in Operation

Company	No. of plants	Date of first Installation	Total installed capacity KVA
California-Oregon Power Co.....	7	1903	*20,650
Pacific Gas & Electric Co.....	14	1895	*121,150
Northern California Power Co., Consolidated.....	6	1901	36,150
Sierra & San Francisco Power Co.....	4	1898	*38,275
Great Western Power Co.....	2	1908	*65,800
Western States Gas & Electric Co.....	2	1903	*6,375
Snow Mountain Water & Power Co.....	1	1908	6,000
Coast Counties Gas & Electric Co.....	1	1896	810
Tuolumne Electric Co.....	1	1908	600
Utica Gold Mining & Hobart Estate Co.'s.....	1	1898	1,500
Mariposa Mining & Commercial Co.....	1	1905	400
San Joaquin Light & Power Corp.....	5	1897	*27,350
Mt. Whitney Power & Electric Co.....	4	1899	9,350
Southern California Edison Co.....	13	1893	*112,100
Ontario Power Co.....	1	1902	750
Holton Power Co.....	2	1906	*950
Los Angeles Aqueduct Power.....	3	1908	*30,180
Sierra Pacific Electric Co.....	5	1899	9,200
Nevada-California Power Co.....	7	1905	*30,250
Southern Sierras Power Co.....			

*On December 31, 1917.

Total Mean Annual Flow of California Streams in Acre-Feet

(Data supplied by U. S. Geological Survey, from Supply Papers and unpublished records.)

Name of stream	Station	Years of record	Run-off in acre-feet
Sacramento River.....	near Red Bluff.....	18	9,770,000
Pit River.....	near Bieber.....	4	589,000
McCloud River.....	near Gregory.....	5	1,840,000
Stony Creek.....	near Fruto.....	11	549,000
Feather River.....	at Oroville.....	10	5,880,000
Yuba River.....	near Smartsville.....	9	3,050,000
Bear River.....	at Van Trent.....	9	364,000
American River.....	at Fair Oaks.....	7	3,820,000
Cache Creek.....	at Yolo.....	10	569,000
San Joaquin River.....	near Friant.....	6	1,930,000
Kern River.....	near Bakersfield.....	18	724,000
Tule River.....	near Portersville.....	11	137,000
Kaweah River.....	near Three Rivers.....	9	506,000
Kings River.....	near Sanger.....	18	1,940,000
Merced River.....	near Merced Falls.....	11	1,250,000
Tuolumne River.....	near LaGrange.....	18	2,070,000
Stanislaus River.....	at Knights Ferry.....	10	1,540,000
Calaveras River.....	at Jenny Lind.....	4	351,000
Mokelumne River.....	near Clements.....	8	988,000
Cosumnes River.....	at Michigan Bar.....	6	398,000
Truckee River.....	at Nev.-Cal. State Line.....	13	798,000
West Fork Carson River.....	at Woodfords.....	11	121,000
East Fork Carson River.....	near Gardnerville, Nevada.....	6	335,000
West Walker River.....	near Coleville.....	6	293,000
Owens River.....	near Lone Pine.....	4	305,000
Sweetwater River.....	near Descanso.....	6	7,900
Santa Ysabel Creek.....	near Escondido.....	5	28,800
Santa Ana River*	near Mentone.....	10	75,500
San Gabriel River*	near Azusa.....	17	112,000
Arroyo Seco.....	near Soledad.....	11	147,000
Colorado River.....	at Yuma, Arizona.....	11	16,900,000
Link River.....	at Klamath Falls, Ore.....	9	1,700,000

*Includes canals.

NATIONAL FORESTS OF CALIFORNIA

Acting District Forester Headley, who is in charge of the California National Forests during the absence in France of Major (formerly District Forester) Du Bois, states that California contains eighteen National Forests, comprising a total area of about 19,250,000 acres. In these Forests there is about 109,000,000,000 feet of timber, largely pine, fir and cedar, having an estimated value of \$225,000,000. About 75,000,000 feet of this timber is cut annually to fill the normal demand. Much of the so-called "back country" in the National Forests is at present inaccessible, but will come on the market naturally with the increase in California's population and with the more intensive development of her resources.

In the fiscal year ending June 30, 1917, 204,935 head of cattle and horses and 465,752 head of sheep and goats obtained summer pasturage within these Forests. Permits for other uses, such as apiaries, corrals, summer resorts, summer homes, etc., total 4,142. Such permits, the ground for which is leased by the Forest Service for long periods at nominal sums, produced a revenue for the year of \$29,824. Many of the larger valley cities and municipalities of the State are now leasing from the Forest Service beautiful tracts of land within the National Forests, and are establishing upon such sites municipal camps, which are run by the cities or municipalities for the benefit of the city dweller. California has become a pioneer in this movement, and it is now possible for the person living in town to enjoy at these camps an extremely pleasant and inexpensive summer vacation.

Within the Forests hydro-electric plants, entirely or partially on National Forest lands, have a total installed capacity of 282,000 horse-power, and permits have been issued for these and other sites which, it was estimated, would produce approximately 500,000 continuous horse-power under low-water conditions.

FOREST PROTECTION

Over \$800,000 is spent annually in administering and protecting these Forests. During the fiscal year ending June 30, 1917, permanent improvements, including some 239 miles of trails and the same number of miles of telephone lines, were built at a cost of \$137,042. The trail and telephone systems within California's Government forests now aggregate 3,742 miles of trails and 4,607 miles of telephone lines.

Each National Forest is under the immediate control of a Forest Supervisor. For purposes of administration and protection, the Forests are divided into Ranger districts, each of which is in charge of a District Ranger. Under the District Rangers are the protection forces—lookouts, patrolmen, and Forest firemen. There are about 85 lookouts employed during the peak of the fire season, and these men, all of whom are stationed on the tops of the highest mountains throughout the Forests, lead lonely lives. It is their duty to discover and report by telephone or heliograph to the nearest Ranger, patrolman or fireman, every fire which starts within the Forest. The Forest Service in California employs on an average some 425 Rangers, patrolmen and firemen during the summer season. In addition, over 800 men—mountaineers, lumbermen, miners and ranchers—are registered with the Forest Service as volunteers to be called out in emergencies. Private owners of timber within the National Forests are more and more taking advantage of the Government's fire protection system. During the fiscal year 1917 approximately \$50,000 was contributed by lumber companies, municipal organizations, railroads, and owners of private timber lands for fire protection. This money was spent through co-operative agreements with the Forest Service on over 4,000,000 acres of timber land and valuable watersheds.

It is conceded by those who have had the most experience, that the 1917 fire season was the most hazardous in California since the National Forests were put under Government administration. Even 1910 is not excepted. The Forest officials reported a total of 1,862 fires, which were extinguished with a total damage of \$183,477. Many of these fires were started by lightning, but, unfortunately, the greater number must be laid to human agencies. The Forest Service has always welcomed campers to the National Forests, but campers in 1917 were responsible for a total of 238 fires. These fires damaged over \$10,000 worth of property and cost over \$20,000 to extinguish. The National Forests are still open to campers, but the Forest Service in California is making every effort to warn them of the danger by fire through carelessness with matches, cigarettes and camp fires.



A SCENE IN THE REDWOODS (SEQUOIA SEMPERVIRENS).

LUMBER INDUSTRY**Lumber Cut in California for Years from 1890 to 1917**

(1917 figures "Pioneer Western Lumberman")

	Feet		Feet
1890	515,823,000	1910	1,254,826,000
1900	734,232,000	1911	1,207,000,000
1905	1,077,499,000	1912	1,203,059,000
1906	1,348,599,000	1913	1,183,380,000
1907	1,345,943,000	1914	1,185,000,000
1908	966,115,000	1915	1,002,000,000
1909	1,144,000,000	1916	1,451,541,000
		1917	1,418,936,000

Total of all classes of lumber cut in the State of California for the year of 1917:

	Feet B. M.
Douglas fir	153,955,000
Western pine	484,565,000
Redwood	487,458,000
Cedar	19,904,000
Sugar pine	129,238,000
White fir	118,828,000
Hemlock	3,379,000
Spruce	20,607,000
Laurel	294,000
Eucalyptus	420,000
Lodgepole pine	75,000
Oak (California)	44,000
Spanish cedar	6,000
Jap. oak	163,000

Total..... 1,418,936,000

The annual timber output of the State is approximately 1,415,541,000 board feet, almost evenly divided between redwood and pine. In connection with the other Pacific States, it supplies about 20% of the raw material for the wood manufacturing industries of the nation.

Receipts of Lumber at San Francisco in 1917

Year	California	Ore. and Wash.	Rail	Total
1917	198,319,002	516,779,947	36,467,000	751,565,969
1916	214,090,933	496,090,726	45,046,000	755,227,659
1915	226,044,000	504,519,000	14,186,000	744,749,000
1914	281,569,000	614,240,000	15,150,000	910,959,000
1913	303,872,000	721,154,000	20,885,000	1,045,911,000
1912	340,257,000	652,307,000	22,143,000	1,014,707,000
1911	324,251,000	634,251,000	.....	958,502,000
1910	332,499,000	675,145,000	.....	1,007,594,000
1909	324,913,000	651,469,000	.....	976,382,000
1908	298,780,000	582,524,000	.....	881,304,000

California Redwood

It is seen from the tables that redwood leads in the lumber production of the State. It produces from 40 to 75 per cent of "clear lumber." The redwood (*Sequoia sempervirens*) is indigenous to California, and is found in no other part of the world. The trees of the *Sequoia* family are the oldest and largest known. The wood takes a distinct and beautiful finish, which makes it valuable for interior use of all kinds. Being free from resin, it is especially resistant to fires and decay, making it especially valuable for siding, shingles and wherever exposed to moisture.

The redwood belt extends from the California-Oregon line southerly along the coast about 240 miles, a narrow belt 10 to 30 miles wide; on the west is the Pacific Ocean and on the east the divide of the low Coast Range.

Annual Shipments of Redwood

The following figures furnished by the "Pioneer Western Lumberman," give the annual shipments of redwood from the California mills north of San Francisco bay:

	Feet		Feet
1902.....	262,597,015	1910.....	446,097,661
1903.....	301,343,953	1911.....	444,925,773
1904.....	324,676,960	1912.....	477,330,460
1905.....	347,679,159	1913.....	404,583,279
1906.....	409,702,576	1914.....	430,520,000
1907.....	437,514,653	1915.....	354,131,000
1908.....	356,549,880	1916.....	406,340,000
1909.....	402,519,307	1917.....	487,458,000

To the above cut should be added approximately 100,000,000 feet going into shingles, shakes, split ties, posts, pickets, etc., and at least 25,000,000 feet manufactured south of San Francisco.

The redwood is peculiarly the poor man's timber and with a few tools he can make a living while clearing his land. Owing to its straight grain and easy splitting qualities, expensive saw-mills and logging outfits are not necessary for putting the timber into marketable condition.

A falling axe, wedges and broad-axe enable the individual worker to fell and work the great trees into ties, posts, shakes, pickets and grape stakes, all of which products find a ready market at remunerative prices at the nearest shipping point.

Another product of the so-called redwood belt is the bark from tan oak, of which about 30,000 cords are peeled annually, with a value of from \$450,000 to \$600,000 at the shipping point.

California Pine

The Sierra Nevada Mountains are the home of the pine. The pine forests of California extend from Kern County 350 miles to the northern boundary of the State in the Sierra Nevada Mountains, with an average width of perhaps twenty miles, and from Napa County to the northern boundary of the State on the eastern slope of the Coast Range. There are also small areas in the San Bernardino Mountains.

The total area of merchantable pine timber is approximately 8,000 square miles. The most valuable trees are the sugar pine (*Pinus lambertiana*), the white pine (*Pinus ponderosa*) and the Jeffrey pine. Other valuable trees which occur in these forests are Douglas fir, white fir, spruce, cedar and Western hemlock.

The woods from these trees are meeting with a steadily increasing demand in the wood manufacturing industries of this country and the entire world. They are unsurpassed for doors, sashes, interior finish, flooring, ceiling, patterns, piano key boards, lead pencils and for many other purposes where strength, durability, stability, ease in working and beauty of finish are required.

There are many great plants in all parts of the State. The great railroad lines carry their product to every part of the United States. The work of lumbering is practically the same as in the redwood districts, steam machinery as a rule getting the logs to the mills, although in some instances ox-teams are still used. Here, as in the redwood country, there are immense log ponds where the logs are stored away for the mills. The cut has run from 400,000,000 to 500,000,000 feet a year, in 1916 running over 700,000,000 feet.

Federal aid has been asked in the effort to quarantine the forests of white and sugar pine from a disease known as rust blister now prevalent in Europe. This is of especial interest to California, where there are over three million acres of the most valuable sugar pine on the Pacific Coast.

According to the official and most reliable lumber authorities, there are about 248 saw-mills, cutting not less than 50,000 feet yearly, scattered through the timber sections of the State. These saw-mills employ over 25,000 men, and pay over \$16,000,000 in wages. They expend over \$18,000,000 for materials, \$6,000,000 for supplies, and \$2,000,000 for taxes.

The total value of the products was \$45,000,000, which was nearly 50 per cent greater than the output of the canning and preserving industry, the next greatest manufacturing industry.

FISHERIES

Both the interior and the coastal waters of California abound in food and game fish, offering inducements both to the pleasure-seeker and the profit-earner.

There are about 165 species of cold-water fauna whose proper home is north of Point Concepcion, and 117 species of semi-tropical fauna found south of Point Concepcion, beyond the reach of the cold currents of the north.

Of these, 133 varieties of food fish are found in the San Francisco markets, including oysters and shell fish.

Over-fishing and destruction of spawning beds through lumbering and placer mining caused a steady decrease in supply of salmon in the Sacramento basin. Through the work of the Federal and State Commissions, however, the rivers have been re-stocked and now there are more salmon in the Sacramento River than ever before, but they are mostly marketed as fresh fish.

The following is a list of the twelve State hatcheries, with the amount of salmon and trout fry distributed at each for the year 1917, as reported by the Fish and Game Commission:

Hatcheries	County	Trout	Salmon
Mt. Shasta	Siskiyou	9,972,000	6,362,000
Mt. Whitney	Inyo	1,285,000	
Tahoe	Placer	1,004,000	
Tallac	El Dorado	1,946,000	
Ft. Seward	Humboldt	1,455,000	491,000
Ukiah	Mendocino	455,000	
Snow Mountain	Mendocino	202,000	
Brookdale	Santa Cruz	985,420	
Almanor	Plumas	335,000	
Domingo Springs	Plumas	128,000	
Bear Lake	San Bernardino	874,000	
Wawona	Mariposa	215,000	
Totals		18,844,420	6,853,000

In addition to the trout and salmon which are propagated and planted from the above hatcheries, the following fish have been taken from other streams and planted in various sections of the State:

Counties	Black Bass	Catfish	Blue Gills Sun Fish	Perch
Butte	202			
Contra Costa	12			
Glenn	100			
Kern	1,025	30		
Lake	260			
Marin	50		50	35
Napa	50			25
Placer	206			
San Francisco	336	320	110	
San Luis Obispo		320	100	
Santa Cruz	60			
Stanislaus	435		90	30
Total	2,736	670	350	90

Pacific Coast Fishing Industry

Extent of Industry	California
Value of output.....	\$8,375,000.00
Capital employed.....	10,000,000.00
Earnings of labor employed.....	3,500,000.00
Number of persons employed.....	9,000

The Alaska Packers Association maintains one large hatchery in Alaska, and in 1917, 57,405,000 salmon fry were liberated.

Besides the home fisheries, there are employed in packing salmon in Alaska waters and Puget Sound, over fifty San Francisco vessels, many men and a large amount of California capital. The following table shows California's share of the industry, which, is very large:

Value of salmon pack for 1917 is approximately \$15,000,000.

Canned salmon and other fisheries products are sent by sea from San Francisco to nearly every country in the world. The shipments of canned salmon alone for 1916 had a total value of \$3,900,000.

The Alaska Packers Association report their pack for 1917 as 1,346,292 cases.

The California sardine pack during the year 1917 aggregated probably a million and a half cases, having a net wholesale selling value of about seven and a half million dollars.

A total of about forty canneries are now engaged on the canning of sardines.

According to the "Western Canner and Packer" the tuna pack for the season 1917 was a little under 550,000 cases, with an approximate value of \$4,995,000, this being a considerable increase over the pack of 1916. All the tuna packing companies have enlarged their plants and increased their industry. Demand for this fish has outlived the supply; packers have practically no stock on hand. The tuna is found off the coast of Southern California and most packers agree that the supply is not only limited but uncertain.

MOTOR VEHICLE REGISTRATION AND RECEIPTS FOR 1917

It is interesting to note from the report of the Motor Vehicle Department of the State of California that the number of motor vehicles shows an increase of approximately 35% over that of 1916, while the receipts from registration, etc., have increased 45%.

The following table shows a list of registrations and receipts:

	Registrations	Receipts
Automobiles.....	306,916	\$2,630,562.94
Motorcycles.....	30,417	49,464.27
Chauffeurs.....	15,957	19,513.00
Automobile dealers.....	2,487	48,734.27
Motorcycle dealers.....	162	777.50
Miscellaneous.....		96,978.29
Total.....	355,939	\$2,846,030.00

The registration for automobiles shows an increase of 123,068 over 1916.

THE MINERAL INDUSTRY

The following table shows the comparative values of the several minerals produced in California during the year 1916 and 1917:

Substance	1916	1917 (estimated)
Antimony ore.....	\$ 25,000	\$ 10,000
Asbestos.....	5,000	3,000
Barytes.....	10,000	7,500
Bituminous rock.....	60,000	60,000
Borax.....	1,670,000	2,500,000
Brick and tile.....	1,600,000	2,000,000
Cement.....	6,100,000	6,000,000
Chromite.....	200,000	1,200,000
Clay—pottery.....	135,000	150,000
Coal.....	25,000	7,000
Copper.....	17,000,000	15,000,000
Dolomite.....	15,000	40,000
Feldspar.....	7,000	15,000
Fuller's Earth.....	4,000	500
Gems.....	3,600	3,000
Gold.....	22,500,000	21,000,000
Graphite.....	.....	3,000
Granite.....	.....	500,000
Gypsum.....	45,000	60,000
Infusorial and diatomaceous earths.....	60,000	80,000
Iron ore.....	3,000	10,000
Lead.....	1,000,000	2,000,000
Lime.....	285,000	400,000
Limestone.....	155,000	215,000
Lithia.....	500	1,000
Magnesite.....	800,000	2,000,000
Magnesium chloride.....	.....	6,000
Manganese ore.....	200,000	600,000
Marble.....	40,000	50,000
Mineral paint.....	1,800	9,000
Mineral water.....	470,000	400,000
Molybdenum ore.....	.....	10,000
Natural gas.....	1,800,000	3,000,000
Petroleum.....	49,000,000	73,000,000
Platinum.....	25,000	50,000
Potash.....	25,000	700,000
Pumice and volcanic ash.....	6,500	20,000
Pyrite.....	295,000	400,000
Quicksilver.....	2,500,000	2,200,000
Salt.....	350,000	400,000
Sandstone.....	8,000	10,000
Silica (sand and quartz).....	35,000	50,000
Silver.....	1,400,000	1,700,000
Slate.....	1,000	1,000
Soapstone and talc.....	15,000	10,000
Soda.....	85,000	300,000
Stone, miscellaneous.....	5,100,000	4,000,000
Tungsten concentrates.....	4,000,000	3,000,000
Zinc.....	2,000,000	1,000,000
Totals.....	\$119,065,400	\$144,239,000

PETROLEUM IN CALIFORNIA

As will be seen from the foregoing tabulation, the petroleum output shows an increase from over \$57,000,000 in 1916 to approximately \$73,000,000 in 1917. The State Mining Bureau attributes this to a number of causes. Production did not keep pace with the demand. New developments were still curtailed because of the Federal Government's suits in the Kern County fields. The yield during 1917 increased approximately 7,000,000 barrels, and the price per barrel averaged at least 25% more than in 1916. The producing wells increased to 7,333 in number. The amount of oil in storage decreased from 57,147,051 barrels in January to 44,036,190 barrels in December.

In the following table the California figures are supplied by the State Mining Bureau, while the production of the United States is taken from the report of the United States Geological Survey:

Year	California (barrels)	United States (barrels)	Year	California (barrels)	United States (barrels)
1901.....	7,710,315	69,389,194	1909.....	58,191,723	183,170,874
1902.....	14,356,910	88,766,916	1910.....	77,697,568	209,556,048
1903.....	24,340,839	100,461,337	1911.....	84,648,157	217,000,000
1904.....	29,736,003	117,080,960	1912.....	89,689,250	222,935,044
1905.....	34,275,701	134,717,580	1913.....	98,494,532	248,446,230
1906.....	32,624,000	126,493,936	1914.....	102,881,907	265,762,535
1907.....	40,311,171	166,095,335	1915.....	91,146,620	281,104,104
1908.....	48,306,910	178,527,355	1916.....	90,262,557	292,300,000
			1917 (est.).....	97,267,832	*

*No figures for United States production available at time of printing.

Production by Fields

Field	1916 Bbls.	1917 Bbls.	Increase + Decrease—
Kern River.....	8,402,525	8,495,610	93,085+
McKittrick.....	3,230,644	3,252,544	21,900+
Midway-Sunset.....	38,925,476	36,560,145	2,365,331—
Lost Hills-Bellridge.....	4,852,431	6,295,329	1,442,898+
Coalinga.....	14,381,493	15,938,543	1,557,050+
Santa Maria-Lompoc.....	4,422,410	5,798,070	1,375,660+
Ventura Co.-Newhall.....	1,122,033	1,186,407	64,374+
Los Angeles-Salt Lake.....	1,721,453	1,501,799	219,654—
Whittier-Fullerton.....	14,679,672	18,155,440	3,475,768+
Summerland.....	56,775	56,570	205—
Watsonville.....	27,450	27,375	75—
Total.....	91,822,362	97,267,832	5,445,470+

RAILWAYS IN CALIFORNIA

Among the important matters handled by the Railroad Commission during 1917 are quoted the following:

All class freight rates on lines of Southern Pacific between all points San Jose, San Francisco and Oakland and the California-Oregon boundary line established, resulting in annual reduction in rates amounting to approximately \$200,000. Decision of Railroad Commission upheld by Federal Court.

State-wide survey of all railroad grade crossings inspected to June 30, 1917; 4,785 reports rendered and 3,000 recommendations for greater safety made. Over one-half of recommendations already carried into effect.

The largest railroad project now under construction in California is the completion of the San Diego and Arizona Railway Company's line of railroad in San Diego County and Mexico, between San Diego and Yuma, Arizona.

The next largest construction is the extension of Minkler Southern Railway Company by the Santa Fe, and of the Visalia Electric Railroad Company by the Southern Pacific Company, to reach the rich orange growing territory of Tulare County.

During the year ending June 30, 1917, 251 miles of steam railroad track and 35 miles of electric main and branch track mileage were constructed in California, and there is at this time construction work being carried on by the Visalia Electric Railroad Company, Pacific Electric Railway Company, and the San Diego Electric Company.

It is interesting to note that the main track mileage constructed by railroads in California from January 1, 1911, to June 30, 1917, totals 381 miles.

Steam Roads

Operating mileage for the year ending June 30, 1917.

Name of road	Mileage
Southern Pacific Co.....	6,313.14
Atchison, Topeka & Santa Fe Railway Co.....	2,253.98
Northwestern Pacific Railroad Co.....	664.06
San Pedro, Los Angeles & Salt Lake Railroad Co.....	585.87
Western Pacific Railway Co.....	500.07
Nevada-California-Oregon Railway.....	244.17
Tonopah & Tidewater Railroad Co.....	147.86
Pacific Coast Railway Co.....	116.67
Sunset Railway Co.....	111.18
McCloud River Railway Co.....	106.55
Thirty-nine other roads in California.....	1,101.80
Total.....	12,145.35

Electric Railways

Name of road	Mileage
Pacific Electric Railway Co.....	1,059.50
Los Angeles Railway Corporation.....	391.58
United Railroads of San Francisco.....	286.02
San Francisco-Oakland Terminals.....	262.84
Northern Electric Railway Co.....	165.56
Oakland, Antioch & Eastern Railway.....	134.77
Central California Traction Co.....	76.70
Peninsular Railway Co.....	80.39
San Diego Electric Railway Co.....	71.71
Visalia Electric Railroad Co.....	49.11
San Francisco, Napa & Calistoga Railway.....	44.52
Petaluma & Santa Rosa Railway Co.....	44.07
Twenty-three other roads in California.....	365.38
Total.....	3,032.15



TRANSPORTATION

SUMMARY OF VALUES

Orchard products:

Fresh deciduous fruits, including apples.....	\$40,000,000	
Citrus fruits.....	45,000,000	
Dried fruits, not including prunes or raisins.....	10,000,000	
Prunes.....	10,000,000	
Canned fruits and vegetables.....	30,000,000	
Olives and olive oil.....	5,000,000	
Nuts.....	8,000,000	
		\$148,000,000

Vineyard products:

Table grapes.....	17,500,000	
Raisins.....	25,000,000	
Wine and brandy.....	20,000,000	
		62,500,000

Dairy and poultry products:

Dairy products.....	48,235,107	
Poultry products.....	35,000,000	
Honey, wax, etc.....	1,000,000	
		84,235,107

Farm products:

Barley.....	46,980,000	
Wheat.....	14,840,000	
Oats.....	5,831,000	
Corn, rye.....	4,740,000	
Rice.....	9,800,000	
Hay and forage.....	87,552,000	
Hops.....	4,869,000	
Sugar beets.....	10,000,000	
		184,612,000

Other field crops:

Potatoes.....	22,838,000	
Potatoes, sweet.....	1,503,000	
Beans.....	49,817,000	
Onions.....	2,600,000	
Fresh Garden produce seeds, etc.....	20,000,000	
Melons.....	7,000,000	
Cotton.....	9,380,000	
		113,138,000

Fish industry:

Coast and interior (tuna and sardines).....	11,600,000	
Salmon fisheries, etc.....	15,000,000	
		26,600,000

Forest and lumber products.....

40,000,000 40,000,000

Mineral products:

Gold.....	21,000,000	
Cement.....	6,000,000	
Copper.....	15,000,000	
Petroleum.....	73,000,000	
Other minerals.....	29,500,000	
		144,500,000

Farm animals and wool:

Live stock.....	207,482,000	
Production of wool on farms.....	5,500,000	
		212,982,000

Nursery and florist products.....

7,000,000 7,000,000

Cider, vinegar, etc.....

4,000,000 4,000,000

Total..... \$1,028,567,107

The manufactures in 1910 were valued at..... \$529,761,000

According to the best information obtainable the value of manufactured products in this State in 1917 was in excess of..... 750,000,000 750,000,000

Grand total..... \$1,777,567,107

NOTE.—Considerable difficulty has been experienced in gathering statistics regarding values, but the above is based on conservative estimates from reliable sources.

THE CALIFORNIA DEVELOPMENT BOARD

A Consolidation of
THE CALIFORNIA STATE BOARD OF TRADE
THE MANUFACTURERS AND PRODUCERS ASSOCIATION OF CALIFORNIA
THE CALIFORNIA PROMOTION COMMITTEE
Ferry Building, San Francisco

OFFICERS

Wm. J. Dutton.....	President
A. B. C. Dohrmann.....	Vice-President
E. M. Cheesewright.....	Assistant Secretary
E. E. Bowles.....	Secretary, Farmers Comm.
Wells Fargo Nevada National Bank.....	Depository

EXECUTIVE COMMITTEE

William J. Dutton.....	Insurance Exchange Bldg., San Francisco
A. B. C. Dohrmann.....	Stockton and Geary Streets, San Francisco
Robert Newton Lynch.....	Ferry Building, San Francisco
N. P. Chipman.....	California Appellate Court, Sacramento
James Irvine.....	Crocker Building, San Francisco
B. F. Walton.....	8 Nineteenth Street, Sacramento
John P. Irish.....	1904 Adeline Street, Oakland
Thomas MacLay.....	Petaluma, California
Chester H. Rowell.....	Fresno, California
Frederick J. Koster.....	22nd and Illinois Streets, San Francisco
R. B. Hale.....	5th and Market Streets, San Francisco
James B. Bullitt.....	Anaotok Ranch, San Jose, California
R. W. Pridham.....	112 Center Street, Los Angeles
John S. Mitchell.....	Hotel Hollenbeck, Los Angeles
Milton Eeberg.....	M. A. Gunst Co., California and Front Streets, San Francisco

ACTIVE MEMBERS

COUNTY REPRESENTATIVES

Alameda.....	Joseph E. Caine, Oakland	Modoc.....	D. P. Talbott, Salinas
Butte.....		Monterey.....	James H. Devine, Sacramento
Colusa.....		Sacramento.....	H. H. Whitmore, Hollister
Contra Costa.....	Frank T. Swett, Martinez	San Benito.....	
Del Norte.....		San Diego.....	
Warren Tryon, 519 Merchants Nat'l Bank, San Francisco		San Joaquin.....	James Y. Coates, Stockton
El Dorado.....	Supervisor J. B. Johnson, Fresno	San Mateo.....	Frank L. Elksward, San Mateo
Fresno.....	Mack C. Coats, Ferry Bldg., San Francisco	Santa Clara.....	Jos. T. Brooks, San Jose
Glenn.....	Wm. S. Clark, Eureka	Shasta.....	W. H. Chase, Redding
Humboldt.....	Thos. F. Burke, Bakersfield	Solano.....	G. G. Halliday, Fairfield
Kern.....	A. G. Robinson, Hanford	Sonoma.....	Thomas MacLay, Petaluma
Kings.....	Nathan Bieber, 594 Tenth Avenue, San Francisco	Stanislaus.....	Geo. T. McCabe, Modesto
Lassen.....	Supervisor John J. Hamilton, Los Angeles	Sutter.....	N. P. Chipman, Sacramento
Los Angeles.....	Walter C. Maloy, Madera	Tehama.....	Arthur E. Miot, Visalia
Madera.....	L. E. Crawford, Ukiah	Tulare.....	
Mendocino.....	O. W. Lehmer, Merced	Yolo.....	
Merced.....		Yuba.....	Mack C. Coats, Ferry Bldg., San Francisco

INDIVIDUALS, FIRMS AND CORPORATIONS—REPRESENTATIVES

Anglo & London Paris National Bank.....	C. F. Hunt, Sansome and Sutter Streets
Balfour, Guthrie & Company.....	R. F. MacLeod, 350 California Street
Bank of California National Association.....	Chas. K. McIntosh, California and Sansome Streets
Baker-Hamilton and Pacific.....	G. A. Holmes, 700-7th Street
Brewers' Protective Association.....	J. A. Hieronimus, care Union Brewing and Malting Company, 18th and Florida Streets
Brandenstein, M. J., & Co.....	3rd and Townsend Streets
Britton, John A.....	445 Sutter Street
California & Hawaiian Sugar Refining Co.....	230 California Street
California Barrel Company.....	Fred J. Koster, 22nd and Illinois Streets
California Packing, Corp., successors to California Fruit Cannery Association.....	V. H. Finckney, 101 California Street
California Pine Box Distributors.....	H. W. Templeman, First National Bank Building
Canadian Bank of Commerce.....	Bruce Heathote, Manager, 450 California Street
Commercial Union Assurance Company.....	E. T. Niebling, 558 Sacramento Street
Crocker National Bank.....	J. B. McCargar, Crocker Building
Emporium, The.....	Wm. Kaufmann, Market near 4th Street
Fireman's Fund Insurance Company.....	Wm. J. Dutton, Insurance Exchange Building
First National Bank of Los Angeles.....	Stoddard Jess, President, Los Angeles
First National Bank of San Francisco.....	C. H. McCormick, Montgomery and Post Streets
Fuller, W. P., & Company.....	F. W. Fuller, 301 Mission Street
German Savings and Loan Society, The.....	William Herrmann, 526 California Street
Goodyear Rubber Company.....	C. F. Runyon, 587 California Street
Gunst, M. A., Company.....	Milton Eeberg, California and Front Streets
Hale Brothers, Inc.....	Market and Fifth Streets
Hibernia Savings and Loan Society, The.....	E. J. Tobin, Jones and McAllister Streets
Hooper, C. A., & Company.....	W. E. Creed, Balboa Building
Hotel St. Francis.....	Thos. J. Pearce, Geary and Powell Streets
Matson Navigation Company.....	W. P. Roth, Vice-President and General Manager, 120 Market Street
Mercantile National Bank of San Francisco.....	W. F. Berry, 424 California Street
Miller & Lux, Inc.....	Merchants Exchange Building
Mission Bank, The.....	16th and Julian Avenue
Moore, Walton N., Dry Goods Company, successors to Moore-Watson Dry Goods Company.....	7-33 Front Street
Nathan-Dohrmann.....	A. B. C. Dohrmann, Geary and Stockton Streets

INDIVIDUALS, FIRMS AND CORPORATIONS—REPRESENTATIVES—Continued.

Pacific Gas and Electric Company.....	L. H. Newbert, 445 Sutter Street
Palace Hotel.....	L. Van Orden, Assistant Manager, New Montgomery and Market Streets
Pope & Talbot.....	W. H. Talbot, 3rd and Berry Streets
Rollins, E. H. & Sons.....	James Jenkins, 300 Montgomery Street
San Joaquin Light & Power Corporation.....	A. G. Wishon, H & Tulare Streets, Fresno
Savings Union Bank and Trust Company.....	John S. Drum, Grant Avenue and O'Farrell Street
Schmidt Lithograph Company.....	Max Schmidt, 2nd and Bryant Streets
Shreve & Company.....	Shreve Building
Spreckels, J. D. & A. B., Securities Co.....	60 California Street
Standard Oil Company.....	W. S. Rheem, 461 Market Street
Tillmann & Bendel.....	Carl H. Schmidt, Pine and Davis Streets
Union Iron Works Company.....	20th and Minnesota Streets
Union Lumber Company.....	Crocker Building
Union Trust Company of San Francisco.....	I. W. Hellman, Jr., Grant Avenue and Market Street
Wellman-Peck & Company.....	W. B. Wellman, 335 Embarcadero
Wells Fargo Nevada National Bank.....	A. D. Oliver, Montgomery and Market Streets
Western Meat Company.....	F. L. Washburn, General Manager, 6th and Townsend Streets
Western Pipe and Steel Company.....	John W. Mason, 444 Market Street

HONORARY MEMBERS

William D. Stephens.....	Governor of California
John M. Perry.....	President, State Board of Agriculture, Stockton
Dr. Ray Lyman Wilbur.....	President Leland Stanford, Jr., University, Palo Alto
Benjamin Ide Wheeler.....	President University of California, Berkeley
Luther Burbank.....	Santa Rosa
G. H. Hecke.....	State Horticulturist, Sacramento
Judge N. P. Chipman.....	California Appellate Court, Sacramento
Colonel John P. Irish.....	Oakland
E. W. Maslin.....	San Francisco
F. McN. Hamilton.....	State Mineralogist, San Francisco
J. A. Filcher.....	San Francisco
J. N. Gillett (former President California Development Board).....	525 Market Street

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The State in Pictures

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The Field Work of the Board

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Free Bidding for District

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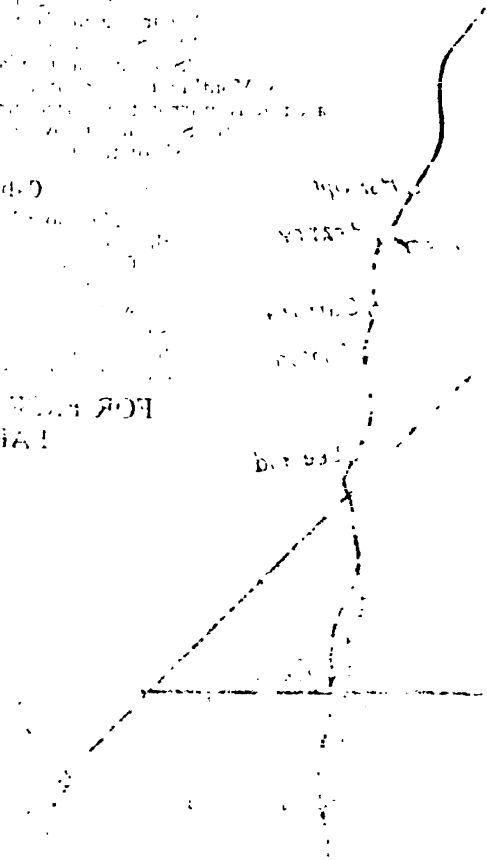
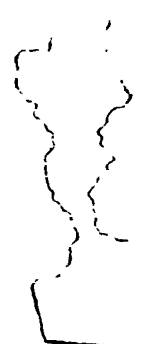
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We Have
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COUNTIES COVERED

BY

AGRICULTURAL SURVEYS MADE

BY THE

California Development Board

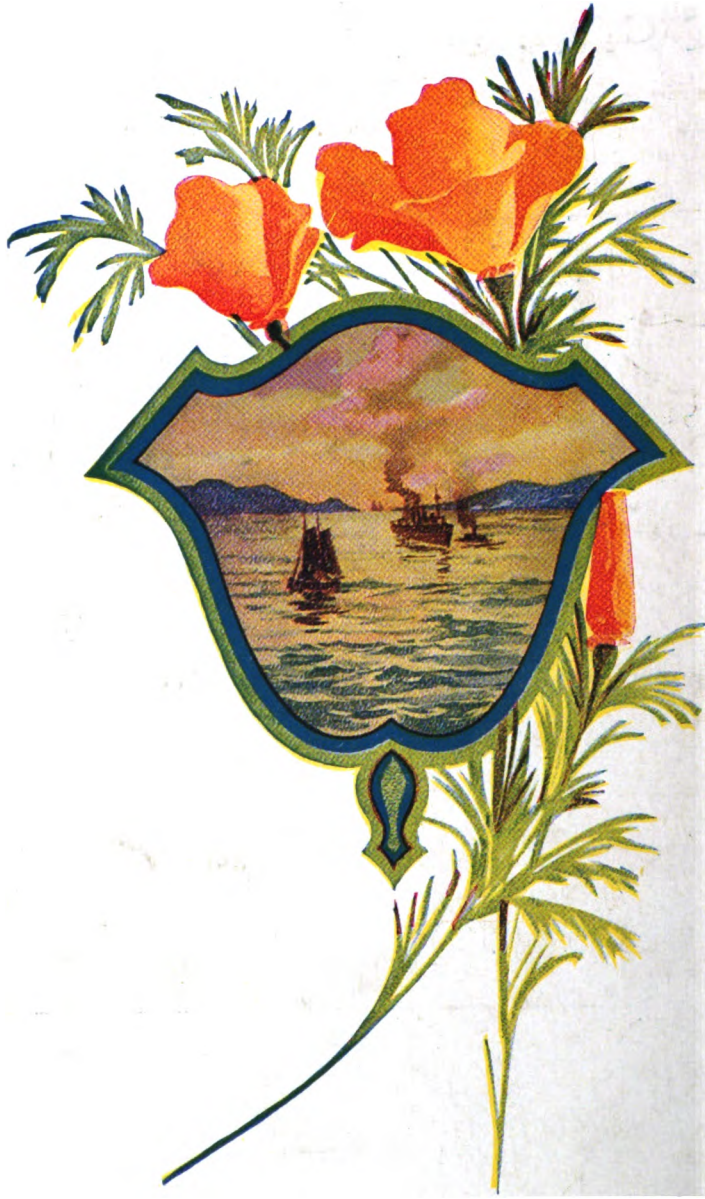


ONE of the most important activities of the California Development Board is that of gathering agricultural information on the State by counties. These surveys cover climatic and soil conditions, crop information, giving details as to methods and costs of production, etc., towns, transportation, irrigation facilities, social and business conditions.

The object of this work is to complete a file of information of this State which would answer the questions of the prospective settler.

So far twenty-two of the counties have been covered and arrangements have been made to complete the whole northern section of the State during the coming summer. There have also been two special surveys made covering Coachella Valley and the Marin County Coast Section.

This information is on file in the rooms of the California Development Board and may be consulted at any time.



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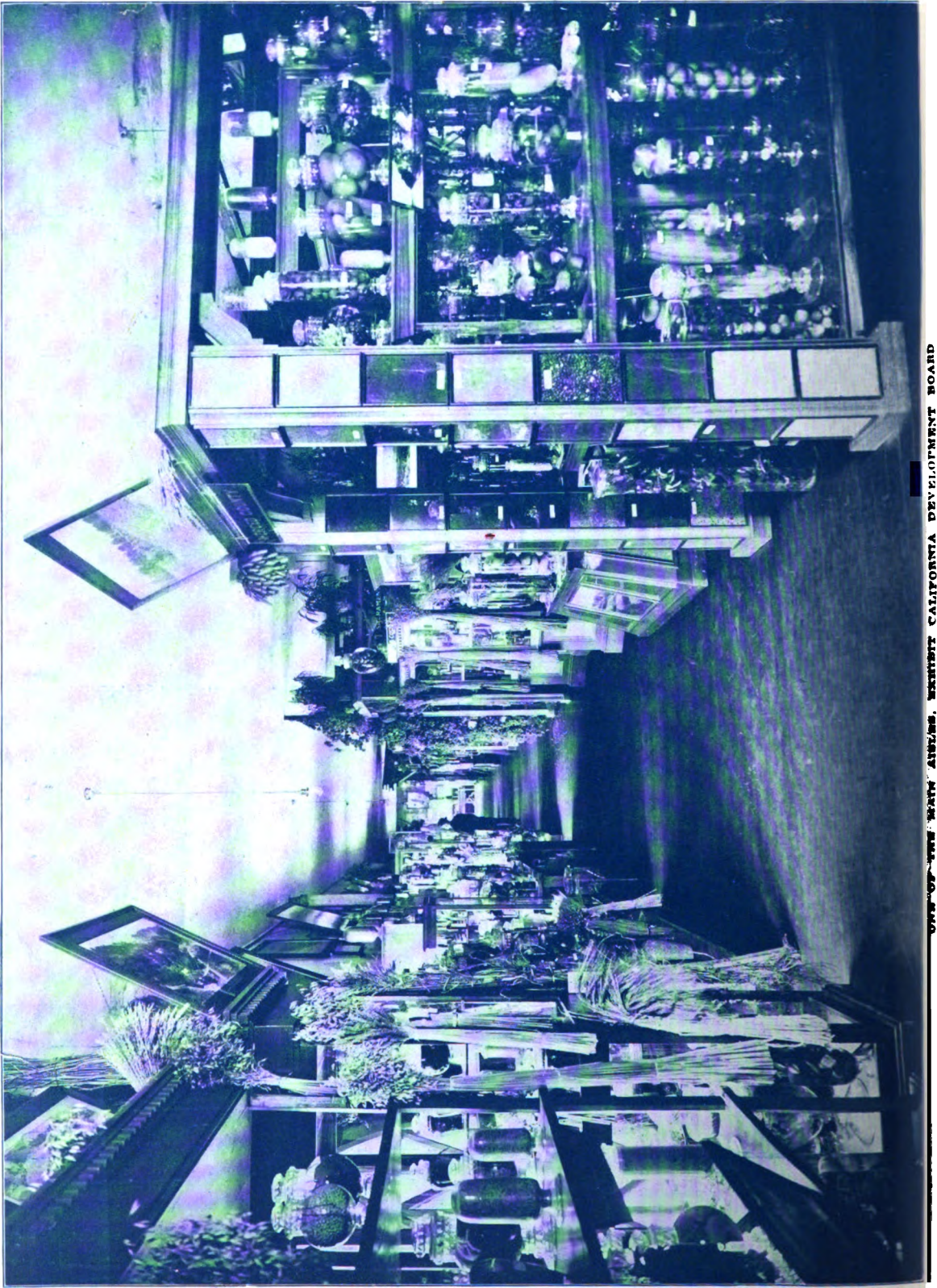
RESOURCES AND POSSIBILITIES



Annual Report

CALIFORNIA
DEVELOPMENT BOARD

SAN FRANCISCO
CALIFORNIA 1918-



VIEW OF THE MAIN AUDITORIUM, GRIFFITH CALIFORNIA DEVELOPMENT BOARD

CALIFORNIA RESOURCES AND POSSIBILITIES

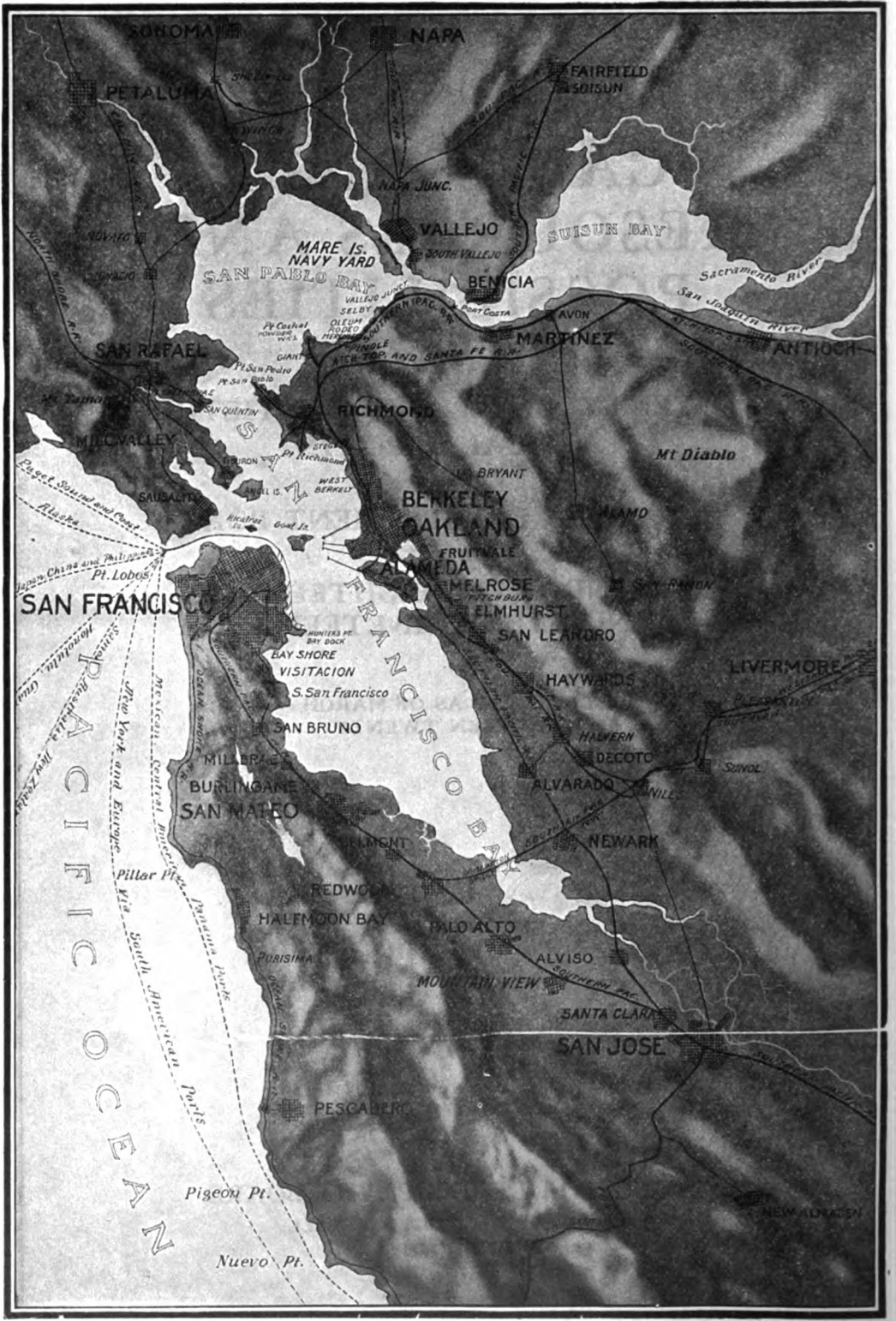
**TWENTY-NINTH AND THIRTIETH
ANNUAL REPORTS
OF THE
CALIFORNIA DEVELOPMENT BOARD
FOR THE
YEARS NINETEEN EIGHTEEN AND
NINETEEN NINETEEN**

**SUBMITTED AS OF MARCH
NINETEEN TWENTY**



**CALIFORNIA DEVELOPMENT BOARD
OFFICE AND EXHIBITION HALL
FERRY BUILDING
SAN FRANCISCO**

The Board.



SAN FRANCISCO AND THE BAY REGION



TWENTY-NINTH AND THIRTIETH ANNUAL REPORTS OF THE CALIFORNIA DEVELOPMENT BOARD

TO THE MEMBERS OF THE BOARD:—

Herewith I beg to submit the Twenty-ninth and Thirtieth Annual Report of the California Development Board. This statistical report comprehends the best figures available of the progress of our agricultural and other industries of this State. They are eloquent of the remarkable possibilities of this great commonwealth, which is capable of supporting upwards of fifty million people from its own products. The natural resources and possibilities of California have scarcely been touched and yet the accompanying report reveals an intrinsic production which makes this State one of the leaders of the Union. The careful selection and scientific tabulation of these figures will challenge the favorable attention of homeseekers and investors throughout the world.

As a background to these authoritative statistics, the California Development Board has now in its possession a most detailed survey of the characteristic agricultural crops of most of the counties of the State. Our field workers have co-operated with various counties in securing and co-ordinating all available data, and this, arranged in practical form, enables us to answer intelligently requests for information from inquirers who desire to know in advance, possibilities, costs, markets, transportation facilities, social and educational environment, and detailed economic facts showing the necessary experience and capital required to initiate agricultural industries in various sections of the State. This intimate information is being constantly revised and prepares the Board to answer all inquiries brought to its attention.

The work of the California Development Board is conducted on a state-wide basis and acts as a clearing house for the activities of similar organizations in various cities and sections of the State. Its exhibit rooms in the Ferry Building are the headquarters for homeseekers and farmers. In as much as the California Development Board has no connection with any commercial enterprise, information distributed is unprejudiced and disinterested. The long history of the work of this organization and its constituent bodies admirably prepares it not only to collect and disseminate accurate information, but gives it opportunity to encourage and develop agricultural industries, and influence interior organizations to greater efficiency.

Respectfully submitted,

ROBERT NEWTON LYNCH,
Vice-President and Manager.

POPULATION OF CALIFORNIA COUNTIES

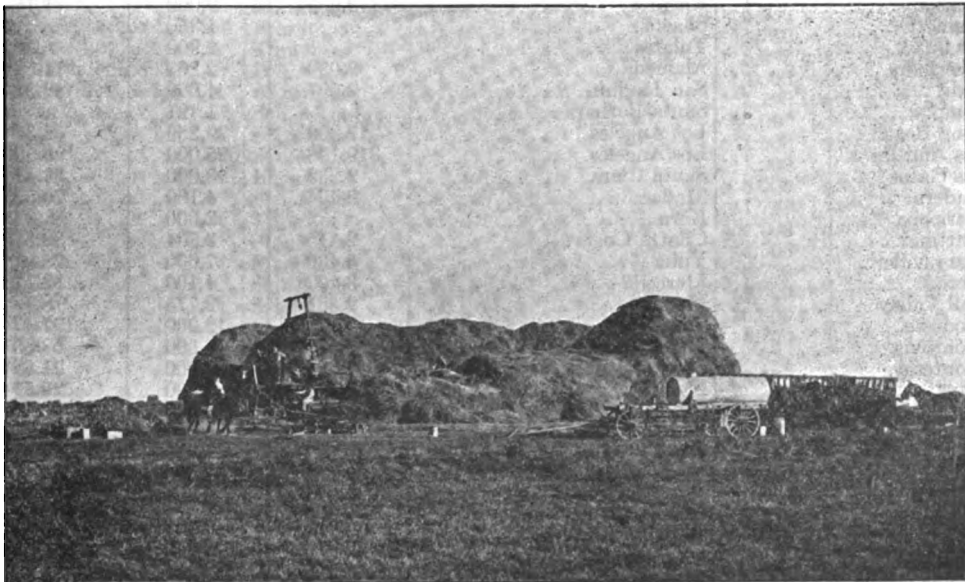
Counties	County Seat	Land Area Square Miles	Population 1910 Census	Estimated Population Dec. 31, 1919	Percentage of Increase (Decrease—)
Alameda.....	Oakland.....	732	246,131	364,746	48.19
Alpine.....	Markleeville.....	776	309	309	None
Amador.....	Jackson City.....	601	9,086	9,543	5.03
Butte.....	Oroville.....	1,722	27,301	37,949	39.00
Calaveras.....	San Andreas.....	1,027	9,171	8,836	-3.79
Colusa.....	Colusa.....	1,140	7,732	8,538	10.42
Contra Costa.....	Martinez.....	714	31,674	44,382	40.12
Del Norte.....	Crescent City.....	1,024	2,417	2,475	2.40
El Dorado.....	Placerville.....	1,753	7,492	7,996	6.73
Fresno.....	Fresno.....	5,950	75,657	130,300	72.22
Glenn.....	Willows.....	1,259	7,172	10,353	44.35
Humboldt.....	Eureka.....	3,634	33,857	42,218	24.70
Imperial.....	El Centro.....	4,089	13,591	43,467	219.82
Inyo.....	Independence.....	10,019	6,974	8,465	21.38
Kern.....	Bakersfield.....	8,003	37,715	69,172	83.41
Kings.....	Hanford.....	1,159	16,230	25,720	58.47
Lake.....	Lakeport.....	1,278	5,526	5,763	4.29
Lassen.....	Susanville.....	4,531	4,802	9,341	94.52
Los Angeles.....	Los Angeles.....	4,067	504,131	844,142	67.44
Madera.....	Madera.....	2,112	8,368	11,368	35.85
Marin.....	San Rafael.....	529	25,114	33,891	34.95
Mariposa.....	Mariposa.....	1,463	3,956	3,956	None
Mendocino.....	Ukiah.....	3,453	23,929	28,580	19.44
Merced.....	Merced.....	1,995	15,148	22,440	48.14
Modoc.....	Alturas.....	3,823	6,191	7,231	16.80
Mono.....	Bridgeport.....	3,030	2,042	2,021	-1.04
Monterey.....	Salinas.....	3,330	24,146	29,897	23.82
Napa.....	Napa.....	783	19,800	21,967	10.94
Nevada.....	Nevada City.....	974	14,955	14,978	.15
Orange.....	Santa Ana.....	795	34,436	59,394	72.48
Placer.....	Auburn.....	1,395	18,237	21,262	16.59
Plumas.....	Quincy.....	2,594	5,259	6,660	26.64
Riverside.....	Riverside.....	7,240	34,696	46,787	34.85
Sacramento.....	Sacramento.....	983	67,806	86,529	27.61
San Benito.....	Hollister.....	1,392	8,041	8,952	11.33
San Bernardino.....	San Bernardino.....	20,157	56,706	72,846	28.46
San Diego.....	San Diego.....	4,221	61,665	92,436	49.90
San Francisco.....	San Francisco.....	43	416,912	607,154	45.63
San Joaquin.....	Stockton.....	1,448	50,731	79,993	57.68
San Luis Obispo.....	San Luis Obispo.....	3,334	19,383	23,315	20.29
San Mateo.....	Redwood City.....	447	26,585	38,033	43.06
Santa Barbara.....	Santa Barbara.....	2,740	27,738	39,316	41.74
Santa Clara.....	San Jose.....	1,328	83,539	110,144	31.85
Santa Cruz.....	Santa Cruz.....	435	26,140	31,728	21.38
Shasta.....	Redding.....	3,858	18,920	20,207	6.80
Sierra.....	Downieville.....	923	4,098	4,174	1.85
Siskiyou.....	Yreka.....	6,256	18,800	22,758	21.06
Solano.....	Fairfield.....	822	27,559	38,581	39.99
Sonoma.....	Santa Rosa.....	1,577	48,394	59,213	22.36
Stanislaus.....	Modesto.....	1,450	22,522	44,706	98.50
Sutter.....	Yuba City.....	608	6,328	7,870	24.37
Tehama.....	Red Bluff.....	2,893	11,401	13,593	19.23
Trinity.....	Weaverville.....	3,166	3,301	3,001	-10.00
Tulare.....	Visalia.....	4,856	35,440	59,108	66.78
Tuolumne.....	Sonora.....	2,190	9,979	9,998	.19
Ventura.....	Ventura.....	1,878	18,347	27,019	47.27
Yolo.....	Woodland.....	1,014	13,926	16,107	15.66
Yuba.....	Marysville.....	639	10,042	12,956	29.02
California.....		155,652	2,377,549	3,513,884	47.79

According to the annual estimate of the Bureau of Census for 1919, the population of California was 3,210,000, showing an increase over the official figures of 1910 of 35.01 per cent. The above estimated population as of date December 31, 1919, is the average of estimates by California State Bureau of Vital Statistics, County Clerks and County Chambers of Commerce.

The census of 1910, California showed an increase of 60.1 per cent with 15.2 population per square mile. During the past nine years the greatest gain in population per square mile occurs in the San Francisco Bay Counties while the greatest aggregate gain and the greatest rate of increase has been in Southern California. Topographically the state divides into the following sections:

Section	Per Cent Increase U. S. Census 1900-1910	Population Per Sq. Mile 1910	Estimated Population 1919
San Francisco Bay Counties.....	40.6	130.2	1,043,824
Southern California (south of Tehachapi).....	146.9	16.6	1,209,424
Sacramento Valley.....	34.6	14.9	232,476
San Joaquin Valley.....	80.2	9.7	491,145
Sierra Nevada Mountain Counties:			
8 show decrease of.....	-18.6	5.07	156,780
8 show increase of.....	17.28		
North Coast Counties:			
1 shows decrease of.....	-.8	13.15	162,216
5 show increase of.....	17.68		
Central Coast Counties.....	28.16	25.3	243,352
			3,537,217

The phenomenal percentage of growth in the majority of instances is readily attributable to the immense manufacturing and industrial development incident to war demands. This likewise affected the towns and cities situated in the intensive agricultural centers, as may be readily seen by comparing the above list with a map depicting the farming sections of the state.



THE KING OF FORAGE CROPS

PRINCIPAL CITIES OF CALIFORNIA

Cities which had a population of 2,000 in 1910, or have shown phenomenal growth. Percentage of growth and estimated population for 1919 given:

City	County	Population 1910 Census	Estimated Population June 30, 1919	Percentage of Increase (Decrease Indicated by -)
Alameda	Alameda	23,383	35,000	49.68
Alhambra	Los Angeles	5,021	5,016	-.10
Anaheim	Orange	2,628	6,000	128.31
Auburn	Placer	2,376	2,438	2.61
Bakersfield	Kern	12,727	22,334	75.49
Benicia	Solano	2,360	3,300	39.83
Berkeley	Alameda	40,434	70,000	73.12
Bishop	Inyo	.....	1,190	.....
Brawley	Imperial	.....	4,000	.....
Calexico	Imperial	.....	6,223	.....
Chico	Butte	3,750	11,550	208.00
Colton	San Bernardino	3,980	5,000	25.63
Corona	Riverside	3,540	4,000	12.99
Daly City	San Mateo	.....	6,500	.....
Dinuba	Tulare	.....	1,085	.....
Dunsmuir	Siakiyou	.....	2,900	.....
El Centro	Imperial	1,610	7,334	355.52
Emeryville	Alameda	.....	3,500	.....
Escondido	San Diego	.....	2,250	.....
Eureka	Humboldt	11,845	18,500	56.18
Fort Bragg	Mendocino	2,408	3,500	45.35
Fresno	Fresno	24,892	55,000	120.95
Fullerton	Orange	.....	6,215	.....
Gilroy	Santa Clara	2,437	3,500	43.62
Glendale	Los Angeles	2,746	2,623	-4.69
Grass Valley	Nevada	4,520	5,000	10.62
Hanford	Kings	4,829	6,400	32.53
Hayward	Alameda	2,746	4,500	63.87
Healdsburg	Sonoma	2,011	2,006	-.25
Hollister	San Benito	2,308	3,083	33.58
Hollywood	Los Angeles	4,829	5,500	13.90
Imperial	Imperial	.....	3,000	.....
Inglewood	Los Angeles	.....	3,800	.....
Jackson	Amador	2,035	2,000	-1.75
Kennett	Shasta	.....	1,350	.....
Lindsay	Tulare	.....	2,900	.....
Livermore	Alameda	2,030	2,265	11.58
Lodi	San Joaquin	2,697	4,000	48.31
Lompoc	Santa Barbara	.....	1,491	.....
Long Beach	Los Angeles	17,809	29,289	64.35
Los Angeles	Los Angeles	319,198	625,000	95.80
Los Gatos	Santa Clara	2,232	3,000	34.41
Madera	Madera	2,404	4,100	70.55
Maricopa	Kern	.....	2,000	.....
Martinez	Contra Costa	2,115	2,804	32.58
Marysville	Yuba	5,430	7,000	28.91
Merced	Merced	3,102	4,100	32.17
Mill Valley	Marin	2,551	2,775	8.78
Modesto	Stanislaus	4,034	12,000	197.47
Monrovia	Los Angeles	3,576	5,500	53.80
Monterey	Monterey	4,923	6,000	21.88
Napa	Napa	5,791	7,500	29.51
National City	San Diego	.....	3,300	.....
Needles	San Bernardino	.....	4,000	.....
Nevada City	Nevada	2,689	2,813	4.61
Oakland	Alameda	150,174	267,500	78.13
Ontario	San Bernardino	4,274	8,500	98.88
Orange	Orange	2,920	3,015	3.25
Oroville	Butte	3,859	5,336	38.27
Oxnard	Ventura	2,555	3,177	24.34
Pacific Grove	Monterey	2,384	3,000	25.84
Palo Alto	Santa Clara	4,486	7,500	67.19

PRINCIPAL CITIES OF CALIFORNIA

City	County	Population 1910 Census	Estimated Population June 30, 1919	Percentage of Increase or (Decrease Indicated by -)
Pasadena.....	Los Angeles.....	30,291	45,000	48.56
Paso Robles.....	San Luis Obispo.....	1,441	2,116	46.84
Petaluma.....	Sonoma.....	5,880	6,250	6.29
Pittsburg.....	Contra Costa.....	2,372	7,000	195.11
Placerville.....	El Dorado.....	2,000	2,100	5.00
Pomona.....	Los Angeles.....	10,207	15,000	46.96
Porterville.....	Tulare.....	2,696	5,500	104.01
Red Bluff.....	Tehama.....	3,530	4,857	37.59
Redding.....	Shasta.....	3,572	4,000	11.98
Redlands.....	San Bernardino.....	10,449	12,668	21.24
Redondo Beach.....	Los Angeles.....	2,935	2,967	1.09
Redwood City.....	San Mateo.....	2,442	3,500	43.33
Richmond.....	Contra Costa.....	6,802	16,000	135.22
Riverside.....	Riverside.....	15,212	20,000	31.48
Roseville.....	Placer.....	2,608	2,800	7.36
Sacramento.....	Sacramento.....	44,696	76,440	71.02
Salinas.....	Monterey.....	3,736	5,250	40.52
San Anselmo.....	Marin.....	.....	2,017	.....
San Bernardino.....	San Bernardino.....	12,779	22,000	72.16
San Diego.....	San Diego.....	39,578	93,334	135.82
San Fernando.....	Los Angeles.....	.....	3,000	.....
San Francisco.....	San Francisco.....	416,912	607,154	45.63
San Gabriel.....	Los Angeles.....	.....	2,500	.....
Sanger.....	Fresno.....	.....	1,500	.....
San Jose.....	Santa Clara.....	28,946	46,439	60.43
San Leandro.....	Alameda.....	3,471	5,500	58.46
San Luis Obispo.....	San Luis Obispo.....	5,157	6,500	26.04
San Mateo.....	San Mateo.....	4,384	6,000	36.86
San Rafael.....	Marin.....	5,934	6,000	1.11
Santa Ana.....	Orange.....	8,429	14,000	66.09
Santa Barbara.....	Santa Barbara.....	11,659	21,667	85.84
Santa Clara.....	Santa Clara.....	4,348	6,000	37.99
Santa Cruz.....	Santa Cruz.....	11,146	14,000	25.61
Santa Maria.....	Santa Barbara.....	2,260	4,500	99.12
Santa Monica.....	Los Angeles.....	7,847	7,923	.97
Santa Paula.....	Ventura.....	2,216	2,858	28.97
Santa Rosa.....	Sonoma.....	7,817	11,375	45.52
Sausalito.....	Marin.....	2,383	2,500	4.91
Selma.....	Fresno.....	.....	1,750	.....
Sonora.....	Tuolumne.....	2,029	3,006	48.15
South Pasadena.....	Los Angeles.....	4,649	8,500	82.84
South San Francisco.....	San Mateo.....	2,000	3,750	87.50
Stockton.....	San Joaquin.....	23,253	50,667	117.89
Suisun.....	Solano.....	1,000	2,500	150.00
Sunnyvale.....	Santa Clara.....	.....	1,900	.....
Taft.....	Kern.....	.....	5,000	.....
Tracy.....	San Joaquin.....	.....	1,750	.....
Tulare.....	Tulare.....	2,758	4,500	63.16
Turlock.....	Stanislaus.....	.....	4,500	.....
Ukiah.....	Mendocino.....	2,136	2,750	28.75
Upland.....	San Bernardino.....	2,384	3,500	46.81
Vallejo.....	Solano.....	11,340	26,000	129.28
Venice.....	Los Angeles.....	3,219	8,750	171.82
Ventura.....	Ventura.....	2,945	4,334	47.16
Visalia.....	Tulare.....	4,550	8,250	81.32
Watsonville.....	Santa Cruz.....	4,446	6,050	36.08
Watts.....	Los Angeles.....	.....	3,775	.....
Whittier.....	Los Angeles.....	4,550	9,250	103.30
Willits.....	Mendocino.....	.....	2,000	.....
Willows.....	Glenn.....	1,139	3,250	185.34
Woodland.....	Yolo.....	3,187	5,166	62.10
Yreka.....	Siskiyou.....	1,134	1,967	73.46

ASSESSED VALUE OF PROPERTY, ACREAGE ASSESSED AND TAX RATE OF EACH COUNTY OF CALIFORNIA FOR 1919

Counties	Number of Acres of Land Assessed	Value of Operative and Non-operative Property	Grand Total of All Property	Total County Rate of Taxation on Each \$100* (No State Rate)	
				Inside	Outside
Alameda.....	457,960	\$ 279,074,246	\$ 284,635,472	\$1.58	— \$1.98
Alpine.....	49,755	744,562	744,562	—	2.00
Amador.....	328,238	6,669,211	6,899,253	2.00	— 2.40
Butte.....	957,744	38,708,938	42,516,976	1.99	— 2.40
Calaveras.....	520,712	7,625,415	8,052,255	2.00	— 2.40
Colusa.....	612,736	18,287,141	19,391,215	1.70	— 2.20
Contra Costa.....	459,403	64,984,520	69,386,364	1.70	— 2.10
Del Norte.....	223,098	6,168,565	6,168,565	2.10	— 2.70
El Dorado.....	679,067	7,564,060	8,428,368	2.30	— 2.70
Fresno.....	2,158,456	123,952,585	132,700,905	1.70	— 2.10
Glenn.....	630,453	19,953,799	21,604,634	1.55	— 2.15
Humboldt.....	1,674,936	34,300,617	36,324,496	2.80	— 3.40
Imperial.....	1,087,609	75,296,081	78,351,481	84	— 1.19
Inyo.....	254,661	11,225,785	14,814,745	1.40	1.70
Kern.....	3,368,037	102,013,067	111,112,141	1.41	— 1.81
Kings.....	831,775	20,651,736	22,954,078	2.20	— 2.80
Lake.....	336,037	5,303,640	5,303,640	2.10	— 2.65
Lassen.....	912,288	8,661,263	11,477,584	1.80	— 2.20
Los Angeles.....	1,234,521	1,054,096,283	1,074,404,454	1.025	— 1.475
Madera.....	800,846	16,553,047	18,492,410	1.85	— 2.25
Marin.....	308,931	23,134,885	24,586,688	1.53	— 1.88
Mariposa.....	356,326	3,617,576	4,180,159	—	2.20
Mendocino.....	1,725,287	18,079,277	19,953,052	3.00	— 3.60
Merced.....	1,183,787	26,025,897	29,720,126	2.30	— 2.90
Modoc.....	706,925	8,392,745	8,578,943	1.45	— 1.85
Mono.....	181,670	2,641,340	3,411,137	—	2.50
Monterey.....	1,460,649	34,800,124	38,879,657	1.99	— 2.39
Napa.....	410,206	20,129,075	22,162,629	1.80	— 2.22
Nevada.....	475,535	8,032,770	8,928,883	2.70	— 3.20
Orange.....	446,990	91,678,830	96,676,173	1.00	— 1.40
Placer.....	627,431	13,125,567	15,929,093	2.55	— 2.95
Plumas.....	534,952	11,624,008	13,940,676	—	2.95
Riverside.....	1,709,899	32,782,230	39,171,356	2.09	— 2.60
Sacramento.....	606,572	102,677,290	106,900,335	1.581	— 2.20
San Benito.....	597,403	12,020,480	12,551,666	2.35	— 2.60
San Bernardino.....	2,175,939	57,806,295	77,254,739	2.15	— 2.59
San Diego.....	1,181,152	81,491,178	83,960,482	1.89	— 2.59
San Francisco.....	29,760	794,080,928	794,459,406	3.08	—
San Joaquin.....	869,156	76,058,249	82,172,897	1.75	— 2.35
San Luis Obispo.....	1,634,171	33,845,355	36,114,492	1.67	— 2.10
San Mateo.....	305,867	37,096,470	38,255,233	2.05	— 2.55
Santa Barbara.....	1,039,823	43,592,320	47,320,405	2.20	— 2.80
Santa Clara.....	754,076	97,353,440	100,093,878	1.48	— 1.90
Santa Cruz.....	259,731	20,456,685	21,830,428	2.60	— 3.23
Shasta.....	1,498,363	17,332,655	19,259,338	2.80	— 3.40
Sierra.....	327,244	2,387,780	2,627,712	2.25	— 2.75
Siskiyou.....	1,911,789	23,059,970	26,680,883	1.64	— 2.24
Solano.....	517,686	28,422,541	30,849,935	1.50	— 1.90
Sonoma.....	914,833	40,321,973	43,483,915	2.70	— 3.10
Stanislaus.....	870,703	43,864,195	47,099,419	2.00	— 2.40
Sutter.....	374,513	17,428,528	19,266,432	2.10	— 2.50
Tehama.....	1,303,963	17,043,185	18,530,687	2.02	— 2.42
Trinity.....	585,731	3,544,235	3,743,886	—	3.00
Tulare.....	1,457,473	52,437,449	58,871,731	3.35	— 3.95
Tuolumne.....	447,665	9,705,496	10,123,121	2.27	— 2.74
Ventura.....	598,696	39,750,900	42,909,125	2.30	— 2.60
Yolo.....	596,983	26,002,049	28,925,306	1.85	— 2.45
Yuba.....	358,170	12,834,680	14,265,297	2.50	— 2.90
Totals.....	48,952,382	\$3,886,513,211	\$4,067,432,918		

* Where two rates of taxation are shown, lesser is upon property within limits of incorporated towns and cities; is exempt from road tax.

(COURTESY OF STATE CONTROLLER.)

FINANCE AND COMMERCE

Financial Conditions and Banks of California

As reported by Mr. Charles F. Stern, Superintendent of State Banks.

The outstanding feature of our banking situation is the tremendous growth of our state banks. At a time when mammoth development and extension had become commonplace, when banking assets and banking wealth were attaining unthought-of magnitude, our banking institutions have established a series of new high records.

In analyzing the facts and figures that tell the story of the condition of state banks on June 30, 1919, the savings banks and savings departments of departmental banks must have first consideration because in our tripartite banking, savings institutions play the most significant part. Of the aggregate of \$1,132,110,034.43 in assets in all our banks, \$779,532,112.04 are the assets of our savings banks. Of a total increase during the year of \$110,600,012.57 in assets in all our banks, \$74,765,798.22 are the increase in assets of the savings banks. Of an increase during the year of \$113,283,586.96 in deposits in all our banks, \$66,854,053.26 are now deposits in our savings banks.

During the year the increase in individual deposits was \$113,283,586.96 as against \$65,678,493.44 for the preceding year. The increase in total resources was \$110,600,012.57 as compared with \$92,285,933.13 for the preceding year. At the close of the fiscal year June 30, 1919, the aggregate assets of the banks operating under state jurisdiction were \$1,132,110,034.43 and the total of deposits was \$947,333,420.85, of which \$702,534,780.23 were in the savings banks and invested in securities free from the hazards of commercial banking.

Compared with the reports of June 29, 1918, the condition of state banks at the close of business on June 30, 1919, as expressed in a combination of the assets and liabilities of savings, commercial and trust company departments, disclose the following facts, among which is the experience of passing the billion dollar mark in deposits:

Combined Statement of Condition of State Banks

Resources	June 29, 1918	June 30, 1919	Increase	Decrease
Loans.....	\$ 587,031,100.38	\$ 610,464,053.11	\$ 23,432,952.73	
Overdrafts.....	659,615.40	1,083,009.42	423,394.02	
Bonds, warrants and other securities, including premium thereon, less all offsetting bond adjustment accounts.....	223,606,850.76	285,449,860.70	61,843,009.94	
Bank premises, furniture and fixtures, safe deposit vaults.....	29,647,033.11	31,290,292.81	1,643,259.70	
Other real estate owned.....	7,411,197.96	8,556,661.35	1,145,463.39	
Due from banks.....	88,815,883.62	104,887,852.69	16,071,969.07	
Cash on hand.....	42,401,120.56	43,617,375.20	1,216,254.64	
Exchanges for clearing house.....	5,051,427.90	8,682,199.14	3,630,771.24	
Checks and other cash items.....	4,023,593.16	6,230,027.34	2,206,434.18	
Advances to court trusts.....	84,641.43	103,390.80	18,739.37	
Other resources.....	25,866,088.84	18,189,640.94		\$ 7,676,447.90
Bankers' acceptances limited.....	961,717.11	3,027,870.36	2,066,153.25	
Notes, drafts or bills of exchange limited.....	5,949,751.63	10,527,810.57	4,578,058.94	
Totals.....	\$1,021,510,021.86	\$1,132,110,034.43	\$118,276,460.47	\$ 7,676,447.90
Liabilities				
Capital stock paid in.....	\$ 70,019,565.00	\$ 72,032,904.94	\$ 2,013,339.94	
Surplus.....	31,388,358.52	33,155,619.69	1,767,261.17	
Undivided profits.....	10,090,464.20	12,200,720.51	2,110,256.31	
Bills payable, including certificates of deposit representing money borrowed.....	3,002,500.00	2,421,358.98		\$ 581,141.02
Notes rediscounted.....	1,180,173.25	2,676,264.14	1,496,090.89	
Deposits due to banks.....	26,688,446.34	19,412,818.31		7,275,628.03
Individual deposits.....	834,049,833.89	947,333,420.85	113,283,586.96	
Deposits of money received from executors, administrators, guardians, assignees, receivers or trustees.....	198,725.42	336,957.23	138,231.81	
State, county and municipal deposits.....	20,819,840.85	20,875,507.10	55,666.25	
Postal savings deposits.....	1,047,412.69	982,039.29		65,373.40
Other liabilities.....	23,024,701.70	20,682,423.39		2,342,278.31
Totals.....	\$1,021,510,021.86	\$1,132,110,034.43	\$120,864,433.33	\$10,264,420.76

The increase in our bank resources has tremendously widened the field for investment; and the changed conditions have affected the character of these investments. For example:

At the close of the fiscal year June 30, 1919, there was an aggregate of \$428,233,357.17 of loans in the savings banks, an increase over the preceding year of \$2,312,561.12. There was, however, an increase of \$54,908,286.34 in investments in bonds, warrants and other securities, the total investment of the preceding year being \$170,747,006.58 and that of the current year being \$225,655,292.92.

This enormous accretion in bond holdings is dominantly in obligations of the United States government and discloses the substantial response of the savings banks of this state to the necessities of war finance.

One of the most interesting features of the functioning of California banks during the fiscal year that closed June 30, 1919, was the splendid response made by our financial institutions to the appeals of the federal government to give up all available gold that its credit structure, already enormous in its proportions, might be maintained to meet any need, even the most exacting, of wartime finance. This response was made in violation of our law under the spur of a patriotic appeal.

On June 30, 1919, our state banks possessed \$13,147,927.60 in gold, gold certificates and United States notes. In a year their holdings had been reduced one-half, a very commendable performance when we consider the great preference the people of the state have for gold. The distribution of the present holdings is as follows: Commercial banks and commercial departments of departmental banks, \$8,150,768.73; savings banks and savings departments of departmental banks, \$4,981,568.87; trust companies and trust departments of departmental banks, \$15,590.00.

At the close of business on June 30, 1919, there were 425 state banks with 146 branch offices. Of these 84 are commercial banks, 114 are savings banks, 7 are trust companies, 193 are commercial and savings departmental banks, 20 are commercial, savings and trust companies, one is a commercial and trust company and 6 are savings and trust companies.

Following are the principal items of Resources and Liabilities of the Banks of California for the years 1918 and 1919:

Capital, Surplus and Undivided Profits

	1918	1919
National Banks.....	\$ 111,123,000.00	\$ 118,527,000.00
State, Commercial and Trust.....	\$ 60,442,762.33	\$ 65,019,487.42
Total Commercial.....	\$ 171,565,762.33	\$ 183,546,487.42
Savings Banks.....	\$ 53,472,460.99	\$ 57,983,836.59
TOTALS.....	\$ 225,038,223.30	\$ 241,530,324.01

Individual Deposits

National Banks.....	\$ 494,937,000.00	\$ 647,926,000.00
State, commercial and trust.....	\$ 227,367,768.29	\$ 321,356,306.28
Total Commercial.....	\$ 722,304,768.29	\$ 979,282,306.28
Savings Banks.....	\$ 648,429,246.76	\$ 796,493,192.29
TOTALS.....	\$1,370,834,015.05	\$1,775,775,498.57

Loans, Including Overdrafts

National Banks.....	\$ 412,861,000.00	\$ 551,540,000.00
State, Commercial and Trust.....	\$ 173,562,617.33	\$ 240,688,688.35
Total Commercial.....	\$ 586,423,617.33	\$ 792,228,688.35
Savings Banks.....	\$ 420,780,209.57	\$ 485,146,391.12
TOTALS.....	\$1,007,203,826.90	\$1,277,375,079.47

Total Resources

National Banks.....	\$ 859,861,000.00	\$1,062,486,000.00
State, Commercial and Trust.....	\$ 332,820,710.42	\$ 439,650,235.39
Total Commercial.....	\$1,192,681,710.42	\$1,402,136,235.89
Savings Banks.....	\$ 721,125,781.94	\$ 873,657,909.50
TOTALS.....	\$1,913,806,492.36	\$2,275,794,145.39

Clearing House Exhibits

Through the courtesy of the various Clearing Houses and Chambers of Commerce in the State, the California Development Board furnishes a statement of weekly bank clearings to the leading newspapers of the State. The following table demonstrates the gain in volume of clearing house business done in the last five years:

	1915	1916	1917	1918	1919
San Francisco.....	\$2,693,688,925	\$3,479,862,482	\$4,837,854,596	\$5,629,321,142	\$7,286,339,237
Los Angeles.....	1,049,110,927	1,292,961,997	1,502,250,000	1,547,065,951	2,339,401,000
Oakland.....	188,464,820	223,044,092	269,919,938	335,334,421	459,583,335
Sacramento.....	101,129,004	127,219,795	174,682,835	203,331,113	270,562,450
San Diego.....	99,636,940	112,043,265	120,931,087	105,790,794	114,590,076
Fresno.....	53,554,334	71,926,311	108,414,657	127,739,180	203,237,517
Stockton.....	50,241,377	71,802,911	93,433,495	99,326,957	*150,343,700
San Jose.....	34,935,899	43,806,621	54,108,480	54,576,100	*274,209,070
Pasadena.....	43,831,333	49,630,130	58,070,385	49,757,597	75,300,686
Bakersfield.....	20,130,949	28,342,893	38,388,521	42,924,202	49,623,271
Long Beach.....	26,418,091	30,469,429	30,469,429	51,888,423	86,765,729
Berkeley (Organized May 1, 1919).....					*87,892,291

* Reporting Bank Debits latter part of 1919.

Building Activities

Fluctuations in building operations throughout the State are recorded in the following table, covering five years:

	1915	1916	1917	1918	1919
San Francisco.....	\$18,626,199	\$19,114,321	\$18,480,527	\$9,288,208	\$18,644,343
Los Angeles.....	11,888,662	15,036,045	16,932,082	8,678,862	28,253,619
Oakland.....	5,045,289	5,368,290	4,442,520	5,382,000	7,134,572
Sacramento.....	1,395,578	2,102,158	1,547,836	1,213,513	2,054,842
San Diego.....	1,275,982	1,869,994	906,097	1,602,990	2,856,015
Fresno.....	1,051,666	884,100	2,036,756	1,882,218	4,131,284
Stockton.....	1,019,452	1,138,174	1,355,243	1,049,711	1,497,990
San Jose.....	555,910	865,741	489,577	524,089	1,067,841
Pasadena.....	1,494,349	1,624,647	1,333,018	455,030	1,831,725
Bakersfield.....	164,916	331,663	604,585	304,750	738,838
Long Beach.....	1,383,055	1,065,205	1,022,205	2,787,994	1,154,180

Imports and Exports

By courtesy of Collectors J. O. Davis, San Francisco District, and J. B. Elliott, Los Angeles District, Treasury Dept., U. S. Customs Service, following are compilations for their respective territories for the past two years:

Collections all Sources

	San Francisco	Total	Los Angeles	Total
January 1 to June 30, 1918.....	\$1,793,249.44	\$3,246,199.19	\$124,660.73	\$223,112.03
July 1 to December 31, 1918.....	1,452,949.75		98,451.30	
January 1 to June 30, 1919.....	1,764,034.17	4,549,099.56	132,051.23	362,593.43
July 1 to December 31, 1919.....	2,785,065.39		230,542.20	

IMPORTS				EXPORTS			
Calendar Year	San Francisco	Los Angeles	Calendar Year	SAN FRANCISCO		LOS ANGELES	
				Domestic Merchandise	Foreign Merchandise	Domestic Merchandise	Foreign Merchandise
1918.....	\$245,524,209	\$ 9,773,433	1918.....	\$210,562,365	\$4,270,414	\$ 7,463,722	\$161,668
1919.....	238,074,061	16,166,628	1919.....	235,784,825	3,816,224	15,144,192	357,719

Shipments to Noncontiguous Ports

	1918	1919
San Francisco (10 months).....	\$42,777,312	\$37,122,562
Los Angeles (12 months).....	537,803	2,283,280

Internal Revenue

Chief Deputy Collector John L. Flynn of the U. S. Internal Revenue Service, says: "In 1909 the total collections, including taxes imposed upon corporations, in the San Francisco District, were \$6,823,000. In the fiscal year ending June 30, 1919, it was \$99,053,000. This calendar year the amount of money collected will exceed \$135,000,000 and some estimates bring this up to \$150,000,000."

The 1919 collection of Internal Revenue in San Francisco totaled \$138,161,881.89 and income tax receipts from San Francisco \$99,636,287.51.

U. S. Mint and State Treasury

Superintendent T. W. H. Shanahan reports operations of the U. S. Mint, San Francisco, California for the calendar year 1919:

Receipts:	Fine Ounces	Value
Gold	2,161,442.504	\$ 44,680,981.80
Silver	3,185,637.03	3,480,861.59
TOTAL	5,347,079.534	\$ 48,161,843.39
Gold Bars sold.....	5,233,168.978	108,179,162.24
Standard Silver Dollars Melted.....		28,400,000.00
Coinage:	Pieces	
United States.....	159,519,000	3,893,650.00
Foreign	9,440,000	1,039,400.00
TOTAL	168,959,000	\$ 4,933,050.00

"The coinage was 50 per cent greater than for any preceding year."

The past year was the first that the State Treasury handled in excess of \$100,000,000. Receipts for 1919 totaled \$52,124,082.89; expenditure disbursements \$54,206,741.09; balance on hand at beginning of 1919 \$12,529,363.40.

Post Office Receipts

Postmaster Charles W. Fay of San Francisco, estimates the gross postal receipts for the calendar year 1919 as \$4,825,545.26, of which approximately 62 per cent was first class matter; 4 per cent second; 3 per cent third; 30 per cent parcel post and about 1 per cent money order and registry fees.

HARBORS

Eureka Harbor

Humboldt Bay is located 216 miles north of San Francisco and 339 miles south of the delta of the Columbia River. It is the only important harbor between these points and contains 25.32 square miles of tidal area with 21 miles of lineal channel varying in depth from 26 to 30 feet at low tide. Prior to 1900 the U. S. Government expended \$2,044,203 in the construction of two rock jetties on either side of the channel. Further appropriation was made in 1911 for this work in the sum of \$1,037,400, for their restoration and strengthening, while \$214,000 was used for dredging the channels of the harbor. Liberal appropriations have been made for

construction and maintenance, which however, during the war period were not used owing to the scarcity of labor and materials. Work is now nearing completion at an approximate cost of about \$2,000,000 by the government.

Humboldt Bay is 21 miles long with a varying width of one and one-half to four miles and is completely land-locked. Without rail connection until 1914, the great lumber output of Humboldt and tributary country was sent out by boat. To-day the majority of the lumber from a score of mills operating as far north as the Oregon state line, form a good 70 per cent of the exports by sea from this port valued at \$10,000,000 per annum.

With the completion of the Northwestern Pacific Railway and almost simultaneously the opening of the Panama Canal, came the opportunity to market the wealth of redwood timber which hitherto had been sold in the east in small quantities only after expensive double handling. Owing to its durability, clear grain, lightness and resistance to weather, acids and wear, redwood is valuable for a great variety of uses including railroad ties, pipe, moulding, vats, shingles, shook, interior finishing, silo and art objects.

Situated practically in the heart of the Northern California redwood belt, with vast areas of Douglas fir and pine also tributary, Eureka is logically the gateway for a tremendous lumber industry. One year's shipment totaled 13,299,032 board feet with a value of half a million dollars. It is estimated that 460,000 acres of standing redwood timber yielding upwards of 45 billion board feet are tributary.

At Eureka the Rolph Shipbuilding Company and the Hammond Lumber Company have extensive yards with miles of lumber railway and spur tracks. The latter also conducts a lumber, planing and saw mill turning out redwood and pine lumber, box shook, stave and silo stock.

The Bayside Lumber Company and McKay Company with daily capacity of about 100,000 feet per day each, and from 7 to 10 miles of logging railway are also located at Eureka. The latter firm specializes in the manufacture of redwood pipe, shingles and silo stock. Dolbeer-Carson Lumber Company has mills with 20,000,000 feet annual capacity and 12 miles of railway at Eureka. E. S. Downing and Company specialize in box shook, while the Robert L. Haughey Company turn out superior quality kiln dried redwood for interior finishing and special uses. Thompson Brick & Tile Company, Cottrell Moulding Mills and the Woolknit Mills are other important industries on the bayshore of Eureka. Mendocino and Humboldt Counties are the principal sheep raising sections of California and the ranges of Southern Oregon produce a good proportion of the fleece which is converted into cloth and blankets at the Woolknit Mills. From 5,000 to 6,000 head of sheep are shipped from this section and the mills are equipped to handle the wool from the shearing shed to finished product. The average annual output is \$750,000, with a payroll of over \$100,000.

Four steamship lines connect Eureka with San Francisco and ports north.

Los Angeles Harbor

The Port of Los Angeles, formerly known as San Pedro, is a broad stretch of navigable water protected by a breakwater 2.11 miles in length.

The harbor is municipally owned and controlled. It is under the jurisdiction of the Harbor Commission appointed by the mayor.

The municipal wharves are of standard construction, 10,380 feet being of wooden piles creosoted and deck; 2,525 feet being reinforced concrete piles and deck.

Private wharves total approximately 24,000 feet and are practically all of wooden construction. The city owns and operates five transit sheds, having a uniform width of 100 feet and combined length of 4,430 feet. There are 585 feet of umbrella sheds. All these improvements are accessible to rail and paved roads.

Municipal Pier No. 1 is 2,520 feet long and 650 feet wide. On the west side of the Outer Harbor is a reinforced concrete wharf, fronting on a channel 400 feet wide and 35 feet deep at low tide. Here is a steel and asbestos-protected transit shed, 1,800 feet long and 100 feet wide running from a six-story reinforced concrete warehouse of more than ten acres floor space and capacity of 80,000 tons cargo. A high density cotton compress has been installed, which helps to handle the cotton crop of the Southwest.

The main channel leading from the Outer to the Inner Harbor is 400 to 900 feet wide, with a depth at low tide of 30 feet and extends two and one-half miles to a turning basin 1,600 feet in diameter. This channel is lined with wharves almost its entire length. The Inner Harbor has over 20,000 feet of channels ranging from 200 to 600 feet in width and 20 to 34 feet depth at low tide. It is contemplated the main channel will be widened to 1,000 feet.

During the last six years Los Angeles has expended \$5,800,000 and the U. S. Government a like amount while appropriation of \$4,500,000 for improvement in the near future has already been voted.

The net tonnage of vessels entering the harbor increased nearly six times from 356,371 tons in 1902, to 2,000,000 tons end of fiscal year June 30, 1919. The total tonnage of all commodities for the fiscal year ending June, 1919, amounted approximately to 2,380,000 tons valued at more than \$86,000,000.

At the present time there are 35,283 linear feet of wharves in the harbor, 13,315 of which are owned and operated by the City of Los Angeles. Under the U. S. Pier-head lines the development of approximately 24 miles of wharf frontage is possible. All the municipal wharves have paved streets and facilities for railroad terminals with every device for speedy and efficient handling of cargoes and passengers. Over 7,000 feet of wharves are operated by railroad companies, 7,960 by private wharf or warehouse companies and 5,229 feet by lumber companies. The City of Los Angeles owns 14 miles of Harbor Belt Railroad over which system the municipal piers are served by other railroad companies.

At the seaward end of the great breakwater rises a splendid concrete light-house, which commands the 20 miles of harbor frontage with the sweep of its occulting light of 67,900 candle power.

A U. S. Naval Base is to be located in the Outer Harbor below Fort MacArthur which crowns the bluffs with its complement of large caliber guns and mortars.

The Union Oil Company of California and the Standard Oil Company maintain piers for the terminal of their oil and gas lines from the southern oil fields, where their tanker fleets may load.

The fish canning industry has increased over 200 per cent during the past three years and contributes greatly to the immense tonnage moving out of this port. Over a dozen large canneries with their fishing fleets are established here. The wholesale fish market built one of the substantial piers 320 feet long by 92 feet in width, and erected a two-story building to house the industry 60x304 feet.

The beaches of Los Angeles are famous and the immediate coast line to Los Angeles Harbor contains a variety of scenery which may be enjoyed practically every day of the year.

Two electric roads connect Santa Monica with the metropolis and Ocean Park to the south, whose replica of the famous Board Walk is a cement footway four miles long and 30 feet wide, overlooking the splendid beach and ocean.

Venice the best lighted beach city in the country, and Redondo Beach, both within half hour's travel by electric train from Los Angeles, have fine hotels, cafes and amusement piers which are taxed to their limit during the summer months. Many of the hotels remain open during the winter to accommodate the winter crop of eastern tourists.

Long Beach south of Port Los Angeles, is connected with the county seat by steam and electric lines and during the past two years a protected harbor has been developed within the city limits as a result of the stimuli by a submarine, steel and wooden emergency shipbuilding yard. Here are several canneries for sea foods and the California Cotton Products Company is erecting a cotton mill for the manufacture of absorbent and medicated cotton and other cotton products.

A pleasure pier with huge sun parlor terminating its 1,800 foot length and numberless hotels and apartment houses, cater to the resident tourist.

Alamitos Beach adjoins Long Beach on the south, pleasantly situated on breeze swept cliffs.

Santa Catalina Island is 25 miles offshore and a world famous fishing ground for the big game tuna and yellowtail. Rugged mountain scenery and aquatic gar-

dens which may be viewed through glass bottomed boats to a depth of eighty feet, are among the many attractions. Avalon, from which steamers make daily trips to Los Angeles Harbor, is the port of the island where excellent accommodations are provided by large hotels, cottages, and in summer, a tent city.

Monterey Bay

Monterey Bay is protected by a peninsula jutting to the northwest and giving shelter from the winter storms. The entrance to the bay faces southwest, so from the inner harbor the ocean is not visible. The entrance has no bar and may be entered by the deepest draft boats in any weather, without tug or pilot. Appropriations by the government have been made on promise of like amount expended by the county, for the alleviation of danger to ships at anchor from the strong undertow, by the construction of a breakwater. The survey of the new federal highway circles the bay, and will continue down the coast through San Luis Obispo County. The completion of this tremendous piece of engineering will open up some of the rugged coast heretofore traversed only by trails.

Hotel Del Monte is too well known throughout the world to need description and is situated a mile and a half from the old town of Monterey. The grounds of the hotel comprise 126 acres where plants and flowers represent every clime from the spruce and snowflowers of the northland to the cacti and semi-tropical shrubs of the south. Its polo field, golf links and tennis courts are the stage of state, coast and international matches.

Commercially as well as from the viewpoint of a sportsman, the salmon, albacore, yellowtail and sardine runs during the spring and summer months are responsible for the large canneries, fresh fish industry and the fleet of pleasure fishing boats on the waters of Monterey Bay. Lobsters and abalone are among the delicacies shipped to coast cities and inland towns from this source.

At Monterey the F. E. Booth Company has one of the largest sardine and salmon canneries in the state, while the Monterey Packing Company, Carmel Canning Company, Pacific Fish Company, Point Lobos Canning Company, Schueckl & Company also operate canneries and ship fresh fish.

Oakland Harbor

Three and a half miles east of San Francisco across the bay, the fingers of the Key Route, Southern Pacific and Western Pacific Railways' moles stretch out from the shallow tidelands of the eastern shore. Over them come 39,000,000 yearly who are employed in the metropolis and commute from the flower garlanded cottages and pretty homes of the Bay Cities.

During operation of railroads by the U. S. Railroad Administration, Oakland mole has been the transcontinental terminus of both the Santa Fe and Southern Pacific Railways, although in normal times Richmond is the recognized terminal of the former. The Western Pacific Railway serving the mountain counties of California and Nevada on its way to Salt Lake City and intermediate points, terminates on its mole which forms the north bank of the Inner Harbor entrance, while the Alameda mole protects the channel on the south side. Through this entrance is operated another line of ferries from San Francisco, which transport motors and teams.

The channel to the Inner Harbor is protected on the north by a rock fill breakwater and dredged to a depth of 30 feet.

Between Oakland and Alameda the drawbridges have been condemned by the government as a hindrance to the increased navigation and permit for a quick-action Bascule bridge granted, which will be erected early in 1920.

Oakland has 29 miles of waterfront, nine and one-half miles of which lie within the Inner Harbor. Its docks afford more than 9,000,000 square feet of floor space and all, under the provisions of the city's ordinances, are public docks although privately owned. The major acreage of waterfront lands are owned by the City of Oakland, and with the exception of the western waterfront are held mostly on long term leases.

The U. S. Government has expended \$7,500,000, principally on the Inner

Harbor. It has a depth of 30 feet at low tide with a width of 300 feet from San Francisco Bay to the swing bridges which are practically within the City of Oakland and afford about three miles of waterway navigable for ocean going steamers of deepest draft. Above that point, to San Leandro Bay, the government and municipality are expending over \$400,000 in deepening and widening the channel. The City of Oakland has expended some \$3,000,000 in harbor improvements and extensions, inclusive of dredging a 30 foot channel along the western waterfront.

For the first ten months of 1919, the exports from Oakland Harbor increased more than 187 per cent over those of the entire year of 1918, and were segregated as to value as follows:

Manufactured Article	1918	10 months 1919
Agricultural implements, tractors, plows.	\$321,120	\$587,685
Machinery, motors, gas engines.....	250,768	491,682
Steel products, pipe, castings.....	287,000	534,691
Miscellaneous, paint, varnish, cotton goods, oxygen gas, stoves.....	878,000	1,648,943
Total	\$1,735,883	\$3,263,001

Work on the U. S. Naval Base will be commenced early this year. The site tendered by the county for this purpose embraces 5,340 acres of tide and submerged lands. Filling and dredging with preliminary survey work was commenced in October, 1918. The expenditure of \$51,000,000 at the annual rate of \$6,000,000 in the construction of this plant, with the army of workmen employed, will mean an addition of approximately 50,000 people and many millions of dollars to Oakland and vicinity. The base will have docks and yards for the major vessels of the Pacific fleet, including 36 submarines and 54 destroyers and will when complete, be the largest plant of its kind in the United States.

This base will provide for the coaling, icing, equipment, outfitting and provisioning of vessels, together with the diversified activities pertinent to a plant of this type.

More than a fourth of all the ships launched in the United States during the war were built by the five shipbuilding plants who have yards located on Oakland Harbor as well as the San Francisco side—Bethlehem Shipbuilding Corporation, Moore Shipbuilding Company, Hanlon Dry Dock and Shipbuilding Company, Union Construction Company and San Francisco Shipbuilding Company, makers of concrete barges.

Since the beginning of the war and prior to 1920, the Bethlehem Shipbuilding Corporation has launched 30 steel vessels approximating 82,878 tons and employ constantly 6,000 men, while 8,000 during the pressure of war demands worked three shifts. This included ten 30-knot torpedo boats and two large submarines for the U. S. Navy.

In the year and a half prior to July 1st, 1919, the Moore Shipbuilding Company launched from their yard 33 ships of total tonnage 305,700 and before the beginning of 1920 will have 28 more with an average tonnage of 9,400 each, off the ways. Just prior to Christmas, 1919, a sextette launching of three freighters and three tankers for the Pacific merchant marine was held at the yard, the great boats taking the water almost simultaneously. The plant covers 45 acres. A 15,000 ton floating drydock and two marine ways are being constructed at a cost of \$2,000,000.

The Hanlon Drydock and Shipbuilding Company employs 3,500 men in constructing the largest wooden vessels on the Coast but changed to steel vessels for war demands. Of these there have been launched prior to 1920 eleven ships with a total tonnage of 58,850.

These three yards are situated on Oakland Harbor, but the Union Construction Company is located on the western waterfront. During the past year this concern has launched a total of 82,000 tons and employs 4,300 men.

On Government Island are built the concrete ships used in the merchant

marine. During the past year shipbuilding has increased 120 per cent over the output of 1918.

One of the most novel industrial plants is that of Barnes & Tibbetts ship outfitters. When hulls are launched and towed to their piers, outfitting of everything required aboard from spars and engines to forks and pillow slips may be completed by this firm. They also operate extensive drydocks and their warehouses to handle the immense assortment of articles required aboard ship, cover many acres. Nine vessels have passed completed out of their hands since the beginning of the war and prior to 1920. Practically every manufacturing city in the United States is represented by one or more of the articles used in outfitting. They employ 700 men and operate three marine railways. The bulk of their work is for the government.

Next in importance to shipbuilding is the manufacture of marine and airplane engines on the Oakland waterfront. Six large plants have run overtime and some of them continuously, during the past two and a half years, to fill the orders for every type of motor. More gas engines are built in Alameda County than in any other section of the country. The Hall-Scott Company in West Berkeley of Liberty motors fame, has for the past three years operated 24 hours a day in producing the throbbing hearts for our flying circus and hipower motor lorries which make the U. S. invincible.

The Albers Milling Company has extensive warehouses and plant on the Southern Pacific main line mole, as has the American Can Company and several other important lumber, manufacturing and shipping concerns.

Construction of a 1,500 foot pier and concrete warehouse involving an expenditure of \$300,000, is under way by the Parr Terminal Company. A deep water channel will accommodate ocean going vessels at their pier, situated just north of the Southern Pacific mainline mole.

The American Manganese Steel Company has built on the western waterfront during the past year one of the finest manganese steel plants in the country at a cost of half a million dollars.

The Standard Coal Company of California has located on the Alameda waterfront and work is now in progress on a \$2,000,000 plant with a storage capacity of 80,000 tons of coal and capable of passing 1,000 tons every eight hours. Immediately adjoining, the Standard Oil Company will shortly expend a million dollars on a fuel oil storage plant and tanker loading piers and pipe lines.

The Federal Wool Company has just broken ground for mills, near the Alameda waterfront, which will represent an expenditure of \$2,800,000 when completed. This will be the largest plant of its kind west of New England.

The Western Milling Company has commenced the erection of a mammoth concrete grain elevator, flour mill and warehouses on Tidal Canal, the deep waterway connecting the Inner Harbor with San Leandro Bay to the south. This will mark the beginning of bulk grain handling in Northern California and the eventual elimination of the jute sack, as well as bringing to Oakland waters a large proportion of the grain trade hitherto handled by river points. A \$2,000,000 investment.

Bisceglia Bros. Canning Company will have a mammoth cannery closely adjoining the yards of the Western Milling Company, ready for the 1920 crops. The site covers twelve and one-half acres.

Automobile and tractor, rubber tire and hose manufacture and a dozen canneries and milling plants make the Oakland waterfront one of the industrial centers of California.

Two amusement parks, Neptune and Idora, are the Coney Islands of Northern California. Tanks of magnificent proportions are the scene of aquatic contests besides furnishing a great diversity of concessions for the entertainment of the public. Piedmont Baths on the outskirts of Berkeley pump from the bay for their salt water tanks.

Alameda County is coming to the fore in manufacturing importance. It now has two thousand operative plants putting out over 270 different lines of product, with annual payroll in excess of fifty million dollars.

Pittsburg Harbor

Pittsburg is situated at the head of Suisun Bay, about 24 miles northeast of San Francisco at the confluence of the Sacramento and San Joaquin Rivers. Since war orders stimulated every line of industrial endeavor, Pittsburg is taking an important place in the manufacturing world.

Dredging of a deep water channel by U. S. Government and state appropriation has just been completed, giving this harbor an average depth of 25 feet and enabling seagoing vessels to navigate to Pittsburg with the tides. The city has just authorized a bond issue of \$350,000 for the construction of municipal wharves and other waterfront improvements.

Among the many industrial and manufacturing plants which have been responsible for the 195.11 per cent increase of population in this city during the past ten years, most prominent are the F. E. Booth Canning Company, Columbia Steel Works (largest open hearth steel works of its kind west of St. Louis) who have recently completed a rolling mill which will furnish steel for two super-dreadnaughts of the U. S. Navy; Great Western Electro-Chemical Company, Hoff Magnesite Company, B. P. Lanteri Shipyards, Pioneer Rubber Works (largest west of Chicago) with important South American and Oriental trade, Redwood Manufacturers' Company, makers of silos, wirewound and continuous stave pipe and tanks, Western California Fish Company and San Francisco Milling Company. Most of these concerns have headquarters in San Francisco, whose Chamber of Commerce greatly influenced the completion and appropriation for the deep water channel to Pittsburg.

Richmond Harbor

North of San Francisco Bay on the Contra Costa shore, south of the confluence of the great San Joaquin and Sacramento Rivers and San Pablo Bay, lies Richmond Harbor.

To the City of Richmond belongs the credit of perfecting one of the largest pieces of harbor development on the Pacific Coast. Incorporated in 1907, its harbor facilities and manufactures have made it important in the commerce of the world. On the western edge is a natural deep water frontage. Important to the rapid growth of Richmond, however, is the Inner Harbor, a U. S. Government project, half the dredging cost of which was borne by the City of Richmond. Of the original appropriation of \$1,170,000, some \$1,100,000 have been spent in dredging the main channel and constructing bulkheads, tunnel and roadway through the rim of hills skirting the natural deep water frontage of the city; a concrete wharf 740 feet in length with every modern freight handling device. The tide lands behind the bulkhead have been filled by the discharge of the dredgers and provide ideal manufacturing and shipping sites. These are leased by the city to the various enterprises established along the waterfront. When completed the new harbor will extend from a point beyond the Santa Fe Railway wharves to Point Isabel in the vicinity of Stege Station and will cost approximately \$4,000,000.

The Standard Oil Company has constructed a harbor and turning basin at their refinery, protected by the range of low hills bordering the natural deep water frontage. Here ocean going vessels and tankers may safely load in a minimum depth of 30 feet. The Standard Oil's harbor will cover 27 acres when completed with a channel 200 feet wide. Concrete wharves and the largest box factory in the west have been constructed to handle the immense output of the plant and pipe lines. The privately owned lands suitable for industrial sites in the immediate neighborhood will have the use of these extensive improvements. The Standard Oil fleet of a hundred ocean and bay craft can load at the refinery instead of using the long pier and wharves as well as the lumber schooners unloading to the box factory.

On the deep frontage of the west side the California Wine Association has extensive plants, warehouses and wharves representing an expenditure of \$3,000,000. It is expected that large manufacturing or warehouse concerns will take over this property, rendered idle by prohibition. Concrete wharf developments,

new berthing for deep draft ships and land filling are under way, involving an expenditure of \$200,000. The plant is served by the Richmond Belt Railroad and its own electric switching plant with special transformer house.

The Richmond Belt Railroad Company has spent \$300,000 improving its line which skirts the waterfront, connecting with the transcontinental systems of the Southern Pacific and Santa Fe Railways besides building extensive warehouses and adding to its 1,000 foot wharf at Point San Pablo.

Proctor & Gamble the soap manufacturers, utilize this unit and daily long trains of P. & G. tank cars take the copra from the holds of the island vessels. Two other copra handling plants and the Pacific Oil & Lead Works also utilize this waterfront, while the Fresno Cooperage Company has just completed a new \$150,000 plant here, from which shipment is made to all parts of the U. S. by rail and foreign and coast trade by boat.

During 1919 a channel 14,000 feet long and 200 feet wide with 30 foot depth at high tide has been completed. This is but one-third the width of the channel provided for by the project. Contract for another strip 200 feet wide and 10,000 feet training wall will be let early in 1920, closely followed by request for bids on the remaining 200 foot width of channel and the turning basin 1,200 by 1,800 feet, which will conclude this unit of the work.

Water in large quantities is necessary for the shipping and manufacturing demand, and the East Bay Company is now finishing a \$3,000,000 storage reservoir with 13,000,000 gallons capacity in San Pablo Canyon, east of the city.

A passenger and automobile ferry makes four round trips daily, and considerably cuts the distance for motorists coming down the Sacramento Valley bound for Marin and Sonoma County points.

Sacramento Harbor

Sacramento, the state capital, rightly named the "Heart of the Sacramento Valley," is situated at the confluence of the great Sacramento and American Rivers. The former is navigable at high tide for river steamers and at all times for the great flotilla of barges and small boats which handle the agricultural wealth of this section.

Appropriations both by federal government and state have been made for the control of flood waters, erection of levees and deepening and widening of the channel. It is anticipated with the enormous demands of the constantly increasing production of the upper Sacramento Valley for cheap and rapid transportation, the Sacramento River will be made navigable for river boats as far north as Red Bluff, serving the rich farming communities en route. The Sacramento is the fourth largest shipping river in the United States and the vast acreage of reclaimed tule and peat lands yield a very fortune, the major portion of which moves to San Francisco markets on the river boats. There are nearly 40 miles of sloughs bisecting these rich farming lands, upon which the smaller draft river boats navigate. In addition there are tributary to the city nearly 35,000 acres of the finest agricultural land in the world, capable of maximum production and irrigation. Small wonder that the efforts of loyal Californians have been bent upon appropriations of such size as would insure a deep water channel, at least as far as the capital, so that their rightful share of ocean trade might come to their door. It is conservatively estimated that the Sacramento River carries \$80,000,000 cargoes annually, chiefly agricultural products of the great Sacramento Valley.

During 1919 141,132 tons of incoming and 54,874 tons of outgoing grain, fruit and produce were handled through the harbor of Sacramento, besides 27,000 incoming and 27,709 outgoing passengers. This did not include considerable tonnage from private wharves, Standard, Associated or Union Oil Companies' docks and those of lumber companies.

Sacramento is the center of the fresh fruit shipments east and during the 1919 season 335 cars of cherries, 425 apricots, 2,800 peaches, 2,900 plums, 4,300 pears, 19,000 grapes and 240 cars of miscellaneous fruit and vegetables left the city. This was an increase of 5,000 cars over the previous year.

San Diego Harbor

San Diego Bay the first port of call north of the Panama Canal, is a crescent-shaped, land-locked harbor with depth of water to accommodate the largest vessels afloat. It has an area of 22 square miles with 38 feet depth over the bar at mean low water.

The inside channel is approximately 2,000 feet wide with a depth ranging from 36 to 75 feet.

The Municipal Pier, owned and operated by the city, is 130 feet wide, 800 feet long with 35 feet of water alongside at mean low water. It is equipped with every modern appliance for the expeditious handling of freight and passengers. In addition there are three other wharves available for commercial purposes, with berth space of 2,000 linear feet.

The City of San Diego owns the tidelands of its entire waterfrontage extending over 11 miles. These were granted from the state by act of legislature upon the condition that the city expend the sum of \$1,000,000 on harbor improvements in the Bay of San Diego. The improvements have been completed at a total cost of \$1,500,000 and consist of the municipal pier, with structural steel warehouse 75x700 feet; 2,750 feet of reinforced concrete seawall with 20 foot apron and fender pile system and dredging of approximately 2,000,000 cubic yards of material impounded behind the seawall and bulkheads, together with the reclamation of 80 acres of valuable industrial tideland sites.

Appreciation of this splendid harbor has been shown by the federal government in locating ten important posts here.

The Santa Fe Railway connects San Diego with Los Angeles and the trans-continental mainlines. The division headquarters and yards are located at San Diego and National City.

The San Diego & Arizona Railway completed in November, 1919, furnishes direct transcontinental service through Baja California (Mexico), Imperial Valley and Yuma. A branch with terminus at Lakeside, a score of miles inland brings to the metropolis the products of the El Cajon Valley, noted for its dairying, poultry, citrus and alfalfa. Another branch runs to La Jolla, Pacific Beach, Old Town and the summer cities and interesting historical points en route.

Several lines of freight and the Pacific Mail S. S. boats furnish frequent service to coast ports, both northern, Mexican and South American.

The operation of a score of canneries for sea food products make the export tonnage large and valuable. The manufacture of high explosives from kelp by the Hercules Powder Company at Chula Vista and the potash derived from similar source for fertilizer by Swift & Company at San Diego, contribute to the importance of its industrial center.

For fiscal year ending July 1, 1919, there came to this port by steamer 477,334 tons valued at \$12,076,341 not including cargoes from Mexico of 12,917 tons valued at \$1,303,326. There passed to Pacific Coast points for this period, 8,743 tons valued at \$1,611,321; to Mexico 1,924 tons valued at \$312,540 and local tonnage 12,502 valued at \$1,265,940.

Coronado, the most important of the many attractive seaside resorts in the vicinity, is situated at the end of a sand spit which connects with the mainland at the southern end of San Diego Bay. Ferries ply hourly between the metropolis and the pretty city which surrounds the splendid grounds of Hotel del Coronado. During the summer season a city of tents springs up to house the ocean lover. Here both ocean and bay sports are available and the Hotel del Coronado is the mecca of fashionable folk during the winter months when golf, polo, tennis and boating may be enjoyed almost every day in this mildest and most equitable of California climates.

San Francisco Harbor and Industries

San Francisco is the largest landlocked harbor in the world, covering 420 square miles with a shoreline, exclusive of navigable inlets of 100 miles. The consolidated city and county of San Francisco has water frontage on the bay of

10 miles. Pierhead line is 800 feet from the bulkhead line and fixed by U. S. Government. The harbor of San Francisco extends from the Golden Gate on the west to the San Mateo County line on the south, a distance of $8\frac{1}{2}$ miles and is owned by the State of California. It is maintained by revenue derived by dockage on ships, tolls on cargo, belt line switching, rentals of docks, seawall lots, Ferry Building, etc., and must under the law be self-sustaining, which it has been from the beginning.

The harbor has at present forty piers of various sizes, providing cargo area equivalent to 131 acres, sufficient to accommodate 1,500,000 tons of cargo per month. There are more than 15 miles of berthing space, dockage for 245 vessels of average size at one time. The San Francisco Harbor Improvement Act of 1913 provided \$8,000,000, as yet unexpended for wharf area to handle the increasing import and export trade of the harbor. During the past year about 9,000,000 tons of freight were handled over the state owned wharves and 164,000 cars handled by the Belt Line R. R., which serves all but two piers. This railway connects with the coast mainline of the Southern Pacific Railway at 3rd and Townsend Streets, and with the Western Pacific, Santa Fe and Northwestern Pacific railroads by ferry slips, operating some 40 miles of railroad, which terminates at the Presidio after serving industrial concerns adjacent to the waterfront, the U. S. Transport docks through a tunnel under Fort Mason, which was completed in 1914 at a cost of \$270,000. Recently extensive changes have been made in the interchange yard by the Southern Pacific Co., which enables the Belt Line to handle an increased number of cars more expeditiously at reduced cost and adds additional trackage to the main Belt Line.

Another concrete pier is contemplated for 1920, immediately north of the Ferry building, to cost about \$500,000, and devoted exclusively to bay and river commerce which has shown a decided increase since the landing places for river boats were served with railroad facilities during the past year. Bulkhead sheds between many of the piers and 200 foot extension to the pierhead line will add many square feet to the existing wharf area, and these improvements are being made as rapidly as possible and practicable. The piers range in size from 125 feet wide by 600 feet long to 200 feet wide by 1,120 feet long. The larger piers devoted to foreign trade are equipped with the most modern electric labor saving devices and the majority of the piers have sufficient depth of water to accommodate any vessel which comes through the Panama Canal. There are also available for use, floating derricks with lifting capacity of 20 to 50 tons, booms from 100 to 150 feet in length; stationary derricks with carrying capacity of from 20 to 30 tons, boom from 60 to 90 feet; shear leg derrick with 100-ton capacity and locomotive cranes of various capacities.

It is contemplated that a portion of 165 acres on the south waterfront, recently acquired by the Harbor Board, will be used for a free port if Congress approves the bill now pending. A terminal for handling Oriental oils in bulk, cases or barrels, is being constructed here and will be ready for use about the first of February, 1920, including storage sheds, heating and pumping plant, pipe lines, tanks, etc., for the rapid and economical handling of various oils. Under provisions of a bill in last legislature, the Harbor is authorized to lease parcels of land to various commercial interests beneficial to the port and advantageous to shipping. Oil importers are completing tanks on some of these parcels which will soon be ready for use and the means of attracting thousands of gallons of Oriental vegetable oils that heretofore went to other ports.

With the rebuilding of the metropolis an immense amount of money has been expended for the improvement, health, safety and beauty of San Francisco. One of the most magnificent Civic Centers surrounds a plaza in the heart of the city, with the stately dome of gold and bronze crowning the City Hall to the west, the Public Library to the east and the \$2,000,000 Civic Auditorium with seating capacity of 12,000 and its \$63,500 pipe organ, to the south. These three buildings represent an expenditure of over \$9,000,000 and the State Building is yet to be constructed, south of the Library at further investment of \$1,000,000.

The Hetch Hetchy Water and Power project is the largest undertaking by any city in the United States. The City of San Francisco owns a watershed of 420,000 acres in the Sierra Nevada Mountains on the headwaters of the Tuolumne River, 160 miles from the metropolis. From this watershed 400 million gallons daily will be procured and over 250,000 hydro-electric H. P. developed eventually. The dam at Lake Eleanor is already built, 1,200 feet long by 70 feet high. Sixty-eight miles of railway has been completed from the vicinity of Oakdale in Stanislaus County to the Hetch Hetchy Valley. Eighteen miles of tunnels concrete lined, 10 feet three inches in diameter, are now under construction to convey water through the mountains. Hydro-electric plant of 4,000 horsepower provides the necessary power for drilling, operation of ore cars and lighting. Work on this plant is being rushed and it is expected the first unit producing about 50,000 horsepower will be ready to deliver in 1923. Bonds for \$45,000,000 have been issued, \$8,000,000 expended to date. The 300 foot dam at the Hetch Hetchy will be built by the Utah Construction Company at a cost of \$5,400,000. Completion of this dam is expected in two years and delivery of water to the City of San Francisco, inside of five years.

Expended by the Municipality 1906 to Jan. 1, 1920

New sewer system.....	\$ 6,150,000
Hipressure fire system.....	5,750,000
Municipal Street Railways.....	5,500,000
Asphalt plant.....	60,000
Civic Center.....	8,800,000
Schools.....	7,500,000
Hospitals.....	3,000,000
Fire and Police Stations.....	510,000
Public Library Lands.....	740,000
Hall of Justice and County Jail.....	1,350,000
Hetch Hetchy Water Supply (lands and preliminary work).....	8,000,000
Docks.....	11,000,000
Streets and pavements.....	16,000,000
Parks and Public Playgrounds.....	1,360,000
Traffic Tunnels.....	4,600,000
Public Buildings (past two years).....	423,000,000
Total.....	\$507,320,000

The United Railroads of San Francisco now have in treasury upwards of \$1,800,000 and for the year 1919 showed gross earnings of \$717,636 over \$599,613 in 1918.

During 1919 4,617 vessels with an aggregate tonnage of 5,259,150 for steamers and 788,275 for sailing vessels passed into this port, while 4,696 departed during the year with 5,441,606 tons steamers and 772,638 tons for sailing vessels. This is an appreciable increase over the 2,000,000 gross tons for 1918.

It is estimated that 17.7 per cent of our population are industrial wage earners and since 1916 San Francisco is taking her rightful place as a manufacturing and exporting center. The increase in output of factories and industrial concerns of the city is reflected in the demand for manufacturing sites and the material proof of bank clearings.

Of these industries, shipbuilding since 1916 has been the most important. It is impossible to credit the San Francisco shipyards with the actual tonnage launched from their ways, as the three largest shipbuilding concerns also have plants on Oakland Harbor. These figures of merchant vessels launched in 1919, are furnished by the U. S. Shipping Board.

	San Francisco District		Humboldt District	
	No.	Tonnage	No.	Tonnage
Steel vessels.....	50	457,850	0	.....
Wooden vessels.....	2	7,550	7	26,280
Concrete vessels.....	1	7,550	0	.....
	53	472,900	7	26,350

Under construction December 31, 1919, 31 steel vessels, tonnage 290,850.

Of recent launchings in the San Francisco Bay yards the following tells the tale:

	No. of Ways	1919		Since January, 1917	
		No. Ships	D. W. Tons	No. Ships	D. W. Tons
Moore Shipbuilding Co.....	10	13	122,800	33	316,800
Bethlehem Shipbuilding Corp.....	18	10	112,000	41	442,483
Schaw-Batcher Ship Works.....	4	8	70,400	14	35,200
Pacific Coast Shipbuilding Co.....	4	3	28,200	6	56,400
Union Construction Company.....	4	2	18,800	6	56,400
Hanlon Shipbuilding & D. D. Co.....	3	2	10,700	7	38,500
TOTAL.....	42	38	362,900	107	945,783

In addition one battleship, four gunboats, 31 destroyers, seven submarines and six tugs were completed for the Navy Department in bay plants, including the Mare Island Navy Yard at Vallejo. At the beginning of 1920, two battleships, 47 destroyers and 12 submarines were under construction, making a total for the past year of launched and building vessels for the Navy, 110. In 1918, 64 were launched and 91 under construction at the beginning of the following year.

Through the agency of the San Francisco Chamber of Commerce the Census Bureau of the government was induced to enlarge the industrial metropolitan area to include practically the entire shore of San Francisco Bay, embracing 4,000 manufacturing plants employing over 65,000 men and production worth over \$350,000,000. The reclamation of the China Basin and Islais Creek tidelands afford suitable sites for hundreds of factories and with dredging, deep water alongside their wharves.

San Luis Obispo Bay

San Luis Obispo Bay indents the coast nine miles south of the city of San Luis Obispo, 204 miles northwest of Los Angeles Harbor and 249 miles southeast of San Francisco Bay. Originally Whaler Reef, extending half a mile southeasterly from Port San Luis formed a natural breakwater although during heavy swells and easterly gales of winter the harbor was exposed. It is an open roadstead. Minimum depth varies from 20 to 33 feet at mean low water in the protected channel while the county pier accommodates vessels of 38 foot draft and the Port San Luis wharf 30 feet. Mean range of tide is 3.7 feet.

The U. S. Government completed a breakwater extending from Point San Luis to Whaler Island and 1,820 feet southeasterly at a cost of \$568,438, in August, 1913. The entire length of this breakwater is 2,401 feet and it insures the safety of vessels at anchor and docked, as well as protecting the deep water channel from filling. Since the completion of this work the commerce of the port has steadily increased.

A fleet of about twenty vessels and barges carries oil from this port to Alaska, South America, Canal Zone, Hawaiian Islands and Pacific Coast ports.

In normal times the Pacific Coast Steamship Company operates bi-weekly passenger boats from this port to other California harbors. During 1915, 761 vessels carrying a tonnage of 1,051,681 valued at \$10,355,955, cleared from this port. For the year ending June 30, 1919, 707 vessels cleared with 3,553.09 tons of merchandise, 7.72 tons of oil in packages, 11,635,249.04 barrels of oil and large cargoes of canned and fresh fish.

Stockton Harbor

Stockton Harbor is an inland waterway 2.5 miles long and connects the City of Stockton with the San Joaquin River, which empties into Suisun Bay 42.5 miles west, where deep draft vessels may ride. Fremont Channel and McLeod Lake form an arm of Stockton Channel near its upper end, making a total of 13,000 feet of waterfront, of which 9,300 are owned by the City of Stockton. The total floor space in warehouses on this waterfront is 800,000 square feet and about one-third of the frontage is covered by wharves.

The existing harbor project provides for a channel 9 feet deep and 200 feet wide from the mouth of the San Joaquin River to the head of Stockton Channel. The preliminary steps have been taken by the U. S. Government toward a channel 300 feet wide and 24 feet deep, which will permit navigation by deep water vessels.

The California Transportation Company and the California Navigation & Improvement Company, operate daily passenger and freight steamers from this point to the metropolis. Several barge and freight companies also handle the produce of this section and river towns en route.

The City of Stockton has expended \$925,000 in permanent waterfront improvement to date. A charter provision provides that 4 per cent of the entire revenue of the city be appropriated for this purpose.

Climatological Chart

County	Station	Elevation (Feet)	Temperature (Degrees Fahrenheit)						Normal Tem- perature
			1918			1919			
			Annual Mean	Highest	Lowest	Annual Mean	Highest	Lowest	
Alameda	Oakland	322	56.5	87	34	55.6	93	31	56.0
Alpine	Tamarack	8,000	40.9	88	-14	42.4	86	-12	37.3
Amador	Jackson City	1,500	59.1	103	22	58.1	99	24	
Butte	Oroville	250	61.2	110	24	61.2	110	21	62.7
Calaveras	Calaveras Ranger Sta.	3,400	51.9	96	17	51.3	98	15	
Colusa	East Park	1,300	58.8	110	21	58.5	110	16	
Contra Costa	Antioch	46	60.9	104	27	60.2	104	24	61.4
Del Norte	Crescent City	125	53.0	102	27	52.7	101	23	51.4
El Dorado	Placerville	1,875	57.5	103	17	55.4	105	16	55.2
Fresno	Fresno	293	63.2	107	25	63.1	108	26	63.2
Glenn	Willows	136	59.0	112	20	60.4	112	17	63.5
Humboldt	Eureka	65	51.6	79	28	51.1	73	26	51.3
Imperial	Calexico	0	70.9	114	26	70.9	114	24	71.1
Inyo	Independence	3,907	57.7	101	14	57.9	101	16	58.5
Kern	Bakersfield	404	63.8	107	25	61.9	110	22	65.1
Kings	Hanford	249	63.4	108	22	62.1	108	20	62.2
Lake	Lakeport	1,450	56.5	107	13	54.9	108	12	
Lassen	Standish	4,000	49.4	95	2	48.7	99	-6	
Los Angeles	Los Angeles	293	63.9	100	37	62.9	96	36	62.3
Los Angeles	Mt. Wilson	5,850	55.0	97	16	55.4	100	15	
Madera	Storey	296	60.8	110	26	60.1	107	24	60.5
Marin	Kentfield	65	57.9	98	24	56.1	104	21	56.1
Marin	Mt. Tamalpais	2,375	55.0	94	28	54.5	92	27	55.4
Mariposa	Yosemite	3,960	50.9	98	8	50.0	98	6	50.5
Mendocino	Ukiah	620	57.6	110	18	56.7	110	17	57.1
Merced	Merced	173	60.7	106	24	60.1	107	20	63.2
Modoc	Alturas	4,400	47.5	98	-15	46.9	103	-18	47.1
Monterey	Salinas	40	56.6	98	21	55.1	90	21	56.3
Napa	Napa	20	55.7	98	23	55.9	104	22	58.1
Nevada	Nevada City	2,850	52.9	101	13	51.8	99	10	53.6
Orange	Santa Ana	133	61.0	100	22	59.7	98	22	
Placer	Auburn	1,380	58.4	107	25	59.1	105	22	60.5
Plumas	Quincy	3,400	52.6	98	10	51.8	100	-5	48.8
Riverside	Riverside	851	63.5	110	25	62.6	106	22	63.0
Sacramento	Sacramento	71	59.9	107	29	59.3	107	24	59.6
San Benito	Hollister	284	56.5	101	23	55.6	93	20	58.9
San Bernardino	San Bernardino	1,054	63.7	110	25	62.4	107	22	62.5
San Bernardino	Needles	477	71.1	122	27	70.5	119	23	72.4
San Diego	San Diego	87	62.3	94	35	61.0	91	35	60.6
San Francisco	San Francisco	207	56.8	85	38	55.8	93	37	54.9
San Joaquin	Stockton	23	59.4	103	26	58.4	102	24	60.1
San Luis Obispo	San Luis Obispo	201	59.5	104	27	58.0	99	24	57.2
Santa Barbara	Santa Barbara	130	60.0	93	31	59.5	94	27	60.0
Santa Clara	San Jose	95	57.6	95	27	56.7	97	22	57.3
Santa Clara	Lick Observatory	4,209	52.7	90	20	52.2	89	15	52.1
Santa Cruz	Santa Cruz	20	56.8	95	28	56.0	90	25	58.2
Shasta	Redding	552	62.9	111	27	62.0	111	24	62.8
Sierra	Downville	3,150	53.3	104	16	52.9	104	13	
Siskiyou	Yreka	2,625	51.7	102	6	51.2	106	0	51.3
Sonoma	Santa Rosa	181	55.3	100	20	54.4	104	15	57.4
Stanislaus	Oakdale	215	59.9	109	26	60.2	106	24	60.1
Tehama	Red Bluff	307	62.4	112	26	61.9	108	24	62.5
Trinity	Weaverville	2,162	55.2	107	9	52.7	110	0	
Tulare	Visalia	334	61.1	107	25	62.5	108	23	61.6
Tuolumne	Sonoma	1,825	59.8	99	23	58.8	99	23	
Ventura	Ojai	900	61.4	109	23	60.6	108	21	60.6
Yolo	Davis	51	60.1	112	24	59.4	111	19	62.7
Yuba	Marysville	67	60.4	110	25	60.0	109	21	64.0

Climatological Chart—Contd.

County	Station	Rainfall (Inches)			Snowfall—Unmelted (Inches)	
		1918 Total	1919 Total	Normal	1918 Total	1919 Total
Alameda	Oakland	23.39	22.80	24.54	0	0
Alpine	Tamarack	41.85	33.27	59.37	375.0	363.5
Amador	Jackson City	28.43	24.92	37.30	2.0	T
Butte	Oroville	22.84	21.81	28.36	0	0
Calaveras	Calaveras Ranger Station	45.87	35.95		36.0	54.4
Colusa	East Park	16.86	11.33	19.32	0	T
Contra Costa	Antioch	16.46	10.99	12.93	0	0
Del Norte	Crescent City	59.58	81.73	78.19	0.1	T
El Dorado	Placerville	37.52	35.56	44.62	1.8	6.5
Fresno	Fresno	13.68	4.50	9.68	0	0
Glenn	Willows	14.85	10.85	16.99	0	0
Humboldt	Eureka	27.94	37.02	46.05	T	0
Imperial	Calxico	1.85	2.85	3.28	0	0
Inyo	Independence	4.02	2.85	4.28	5.9	0.2
Kern	Bakersfield	6.62	3.79	5.92	0	0
Kings	Hanford	12.51	3.82	9.20	0	0
Lake	Lakeport	21.93	23.62	31.02	0	3.5
Lassen	Standish	11.15	9.06		20.0	32.0
Los Angeles	Los Angeles	17.49	8.32	15.64	0	T
Los Angeles	Mt. Wilson	36.22	21.53		38.5	64.0
Madera	Storey	13.33	4.03	9.66	0	0
Marin	Kentfield	36.94	50.32	50.28	0	0
Marin	Mt. Tamalpais	21.53	25.92	30.42	0.8	1.1
Mariposa	Yosemite	34.45	22.85	37.43	0	99.5
Mendocino	Ukiah	26.57	35.22	37.30	0	0
Merced	Merced	14.97	7.96	10.70	0	0
Modoc	Alturas	9.81	11.83	12.95	46.5	76.1
Monterey	Salinas	17.74	11.10	14.14	0	0
Napa	Napa	19.75	24.08	24.32	0	1.0
Nevada	Nevada City	40.70	40.15	54.35	17.5	35.5
Orange	Santa Ana	12.05	9.28	13.33	0	0
Placer	Auburn	32.02	29.27	33.87	0	0
Plumas	Quincy	28.18	35.68	44.00	57.0	93.5
Riverside	Riverside	12.70	8.66	10.59	0	0
Sacramento	Sacramento	16.92	12.80	20.09	0	0
San Benito	Hollister	17.29	9.64	13.12	0	0
San Bernardino	San Bernardino	17.61	13.99	15.97	0	T
San Bernardino	Needles	7.68	4.44	3.52	0	T
San Diego	San Diego	11.99	6.76	10.01	0	0
San Francisco	San Francisco	20.85	19.04	22.27	0	0
San Joaquin	Stockton	15.21	10.08	14.63	0	0
San Luis Obispo	San Luis Obispo	24.82	15.82	20.61	0	T
Santa Barbara	Santa Barbara	28.85	10.46	18.14	0	0
Santa Clara	San Jose	18.28	11.98	16.75	0	0
Santa Clara	Lick Observatory	24.10	22.90	32.28	8.0	30.0
Santa Cruz	Santa Cruz	22.84	22.13	28.06	0	0
Shasta	Redding	30.76	36.69	38.79	T	3.0
Sierra	Downieville	55.72	55.12		25.2	82.5
Siakiyou	Yreka	14.13	16.57	17.96	0.6	15.0
Sonoma	Santa Rosa	24.21	22.59	32.07	0	0
Stanislaus	Oakdale		8.13	15.50	0	0
Tehama	Red Bluff	23.57	15.71	25.03	0	0
Trinity	Weaverville	25.63	36.05	39.03	0	28.5
Tulare	Visalia	11.02	6.79	10.41	0	0
Tuolumne	Sonora	25.88	29.73	37.11	0	T
Ventura	Ojai	30.53	11.82	25.96	0	0
Yolo	Davis	16.09	14.64	17.41	0	0
Yuba	Marysville	19.30	17.36	19.80	0	0

(T means trace.)

IRRIGATION

Including all of the valley lands, rolling plains of the Great Valley and the arable portions of the Sierra foothills to about 3,000 foot elevation and all of the plateaus and desert lands where some irrigation water is available, California has a total area of irrigable agricultural land embracing approximately 22,000,000 acres. Nearly 6,000,000 of these are under irrigation with a possibility of supplying 10,000,000 ultimately. Over 15 per cent of this irrigated area lies in northern California, 61 per cent in central California and the balance in the southern end of the state. About 35.5 per cent of the areas ultimately possible of irrigation lie in the north, 44.5 per cent in the central and 20 per cent in the southern end of the state.

Our water supply for irrigation, mining, hydro-electric energy and domestic supply is derived from streams, lakes, wells (both pump and artesian) and irrigation systems. The U. S. Government has completed three irrigation enterprises in California: (1) the Orland Project supplying water to 20,500 acres in Glenn and

Tehama Counties in the northern end of the Sacramento Valley; (2) Yuma or Laguna Project, operating largely in Arizona but supplying 15,000 acres in the San Pasqual Valley in Imperial County on the Colorado River; (3) Klamath Project covering land in southern Oregon and around Tule Lake in Siskiyou and Modoc Counties, California.

State and Federal Reclamation Services have completed and are engaged on flood control and protection of agricultural lands from flood.

The annual mean flow of our major surface streams approaches 60,000,000 acre feet but while this is a sufficient amount to cover all the irrigable land in the state to a depth of three feet, it is not available when and where most needed, nor is the mean flow of streams the amount possible of utilization except as storage is available. This is possible with relatively few streams.

While agricultural areas in the northern coast counties are under irrigation, the majority of farming tracts depend upon the heavy rainfall of this section. Of the 88,197 farms in the state, nearly 60 per cent are under irrigation. Imperial and Inyo Counties have the largest percentage of irrigated farms while Fresno County has the largest irrigated acreage of the 58 counties of the state.

The State Water Commission has supervision over the use of unappropriated waters of California. These waters were declared to be public property under the Water Commission Act, effective December 19, 1914. Under this act applications must be filed with the Commission for permit to use unappropriated water. The principal applications received are for irrigation and generation of hydro-electric power but demand for mining and municipal uses is also considerable. During the last half of 1919, 62 per cent of the applications received were for agricultural, 30 per cent for power, 6 per cent for mining and 2 per cent for municipal uses.

In 1917 the peak did not reach its anticipated climax but fell off rapidly immediately after the declaration of war in April. The efforts to stimulate food production resulted in a partial recovery late in 1917 which reached its height early in 1918. The average for the year 1918, however, was 18 per cent less than in 1916 and 15 per cent less than in 1917. The month of the armistice (November 1918) produced a sharp decline with a minimum below that of any previous month in the history of the Commission. The subsequent recovery has been rapid, the rise continuing steadily to December, 1919, during which month applications received increased 33 per cent over any previous month and for the year 1919, 37 per cent greater than the average for the past five years. This unprecedented activity is the result of the prevailing high prices for agricultural products and the more intensive cultivation of the soil by means of irrigation.

The applications are for widely varying amounts of water and for the irrigation of a few acres by homesteaders in the hills to several hundred thousand acres by irrigation districts in the San Joaquin Valley. The extent of the immediately proposed agricultural development in the state is indicated by the fact that the total area of land for the irrigation of which applications have been filed during the six months ending December 31st, 1919, is 2,140,000 acres. This area is 22 per cent of the total irrigable acreage of the state for which water is available at this time and is more than one-half of the present irrigated area. The lands applied for are principally in the great valley of central California and include the Merced, Madera, San Jose, proposed Kern Delta and other large irrigation districts in the San Joaquin Valley, as well as rice lands in the Sacramento Valley.

Hydro-electric power development is fully as active as agricultural development. For the same six months period applications were received for permits to divert water to generate 2,103,000 theoretical horsepower, largely on streams tributary to the San Joaquin Valley. This quantity is 26 per cent of the maximum ultimate power development of the state as stated in the report of the U. S. Commissioner of Corporations in 1912.

WATER POWER RESOURCES

California has been the pioneer in hydro-electrical development, the first plant operated in the town of Folsom in Placer County, was the first commercial hydro-electric high-tension transmission to be built in the United States, closely following the operation of the first one in the world at Frankfort-on-the-Main in 1894. This first plant had a fall of water 56 feet and a voltage line of 11,000. To-day there are plants operating within the state under head of 2,215 feet and transmission lines carrying as high as 150,000 volts.

With the ever-widening markets in South America, the Orient, Island territories and at home, California can feel assured her industrial future is secure. It remains but to generate the motive power for driving our huge manufacturing, mining and agricultural operations to complete this promise of so bright a future. In 1916 the Government estimated the minimum potential water power in the United States as 26,736,000 horsepower; of this 3,424,000 is available in California; of this but 430,000 horsepower or 8 per cent of the possible development had taken place in this state to date of 1916.

Through the courtesy of the Engineering Department of the Railroad Commission of California, the following comprehensive report on hydro-electric development is furnished.

Electric Utilities

There are 84 electric utilities in the state of California, operating 75 hydro-electric plants, with an installed capacity of 465,000 kilowatts and 50 steam plants with an installed capacity of 305,000 kilowatts, making a total of 125 plants, aggregating 770,000 kilowatts. During 1918, these plants generated a total of 2,892,000,000 kilowatt hours, of which 2,163,000,000, or 75 per cent of the total amount were produced from water power.

This power is transmitted through 7300 miles of high tension transmission lines to points of distribution, from which 84,000 miles of secondary distribution lines extend. Electric service is supplied to 545,000 consumers.

Installed capacity of consumers' lights, motors and other power-consuming devices exceeds 1,800,000 horsepower. Nearly 900,000 kilowatts of distribution transformers are installed on these systems.

Past Growth and Future Estimates

Northern California

The following figures for the years 1915-1918 inclusive are based on the actual output of the five principal systems supplying northern and central California.

The figures given for 1919-1922 inclusive are estimates of the necessary output and peak load of those systems to fulfill the growing demand for electricity in northern California.

	Millions of Kw. Hr.	Peak Load in Kw.
1915.....	1,220.....	220,000
1916.....	1,360.....	240,000
1917.....	1,510.....	260,000
1918.....	1,680.....	300,000
1919.....	1,850.....	340,000
1920.....	2,050.....	365,000
1921.....	2,250.....	400,000
1922.....	2,450.....	445,000

For the territory supplied by the five northern and central California companies, alone, it is estimated that additional generating facilities must be provided at a rate of not less than 30,000 kilowatts per annum, which will entail expenditures of at least \$5,000,000 per year for power stations and transmission lines alone. This does not include an equally large expenditure for distribution and other facilities necessary to deliver this power.

Developments Now in Progress

At the present time there are under way hydro-electric developments and transmission line construction in California which total an expenditure of \$22,000,000 and will render available within two years an additional 120,000 kilowatts of generated capacity.

The four main projects under way are the construction of the Caribou Plant of the Great Western Power Company on Feather River, now being installed to a capacity of 40,000 kilowatts, although much of the hydraulic construction is sufficient for the ultimate installation of 120,000 kilowatts.

The San Joaquin Light & Power Corporation is making rapid progress on its new Kerckhoff plant, which when completed will have an installed capacity of 30,000 kilowatts.

The Southern California Edison Company is building a 30,000 kilowatt plant, to be known as Kern River No. 3, involving an expenditure of \$9,231,350 when completed about July, 1922.

The City of Los Angeles is erecting an additional power plant, utilizing the waters of the Aqueduct in a drop in San Francisquito Canyon. This plant will be of 20,000 kilowatt capacity.

In addition to these new generating plants, several hundred miles of high tension transmission lines operating at 110,000 to 150,000 volts, are now under way.



UPPER KERN LAKE

Hydro-Electric Plants in California—1919

Name of Utility	Name of Plant	Location	Installed Capacity K. V. A.	Total
Alturas Electric Power Co.		Near Alturas	440	440
California Power & Mfg. Co.		Fall River Mills	200	200
California-Oregon Power Co.	Copco	Siakiyou Co.	12,500	
	Carrville	Trinity Co.	320	
	Fall Creek	Siakiyou Co.	2,875	
	Shasta River	Siakiyou Co.	450	
				16,145
Coast Counties Gas & Electric Company	Swanton	Santa Cruz Co.	630	630
Great Western Power Co.	Butte Creek	Plumas Co.	800	
	Feather River No. 1	Las Plumas	65,000	
				65,800
Lassen Electric Company	Bunnell Springs	Lassen Co.	150	
	Susan River	Susanville	50	
				200
Mt. Whitney Power & Electric Co.	Kaweah No. 1	Hammond	1,350	
	Kaweah No. 2	Hammond near	1,700	
	Kaweah No. 3	Hammond near	2,800	
	Tule No. 4	Springville near	2,000	
				7,850
Ontario Power Co.	No. 1	San Antonio Canyon	750	750
Pacific Gas & Electric Co.	Alta	Placer Co.	2,000	
	Centerville	Butte Co.	6,400	
	Coal Canyon	Butte Co.	1,000	
	Colgate	Yuba Co.	14,200	
	Coleman	Cottonwood	15,000	
	De Sabla	Butte Co.	13,000	
	Deer Creek	Nevada Co.	5,500	
	Drum	Placer Co.	25,000	
	Electra	Amador Co.	20,000	
	Folsom	Sacramento Co.	3,750	
	Halsey	Placer Co.	12,500	
	Inskip	Paynes Creek, Tehama Co.	6,000	
	Kilaro	Fern, Shasta Co.	3,000	
	Lime Saddle	Butte Co.	2,000	
	Spaulding	Nevada Co.	3,750	
	South	Near Manton, Tehama Co.	4,000	
	South Cow Creek	Millville	1,500	
	Volta	Manton	6,650	
	Wise	Placer Co.	12,500	
				157,750
Plumas Light & Power Co.		Greenville	30	30
Quincy Electric Light & Power Company		Quincy	175	175
San Joaquin Light & Power Corporation	So. San Joaquin No. 1	Madera Co.	16,000	
	So. San Joaquin No. 2	Madera Co.	2,000	
	So. San Joaquin No. 3	Madera Co.	3,000	
	Tule River	Tulare Co.	6,000	
	Kern Canyon	Kern Co.	4,200	
	Merced Falls	Merced Co.	500	
	Kittridge	Mariposa Co.	375	
				32,075
Sierra & San Francisco Power Company	Knights Ferry	Stanislaus Co.	520	
	La Grange	Stanislaus Co.	820	
	Phoenix	Tuolumne Co.	1,500	
	Stanislaus	Tuolumne Co.	34,000	
				36,840
Snow Mountain Water & Power Company	Potter Valley	Mendocino Co.	8,750	8,750
Southern California Edison Company	Asusa	Los Angeles Co.	1,500	
	Big Creek No. 1	Fresno Co.	32,000	
	Big Creek No. 2	Fresno Co.	32,000	
	Borel	Kern Co.	10,000	
	Fontana	South San Bernardino	1,800	
	Kern River No. 1	Kern Co.	20,000	
	Lytle Creek	South San Bernardino	500	
	Mill Creek No. 1	South San Bernardino	750	
	Mill Creek No. 2	South San Bernardino		
	Mill Creek No. 3	South San Bernardino	3,250	
	Santa Ana River No. 1	South San Bernardino	3,000	
	Santa Ana River No. 2	South San Bernardino	1,000	
	Santa Ana River No. 3	South San Bernardino	1,500	
	Sierra	Los Angeles Co.	600	
				116,650
Southern Sierras Power Co.	Bishop Creek No. 2	Bishop	6,000	
	Bishop Creek No. 3	Bishop	6,750	
	Bishop Creek No. 4	Bishop	8,000	
	Bishop Creek No. 5	Bishop	1,500	
	Bishop Creek No. 6	Bishop	2,000	
	Rush Creek	Mono Co.	10,000	
				34,250
Truckee Electric Light & Power Company		Truckee	150	150
Truckee General Electric Co.		Floriston	1,200	1,200
Weaverville Electric Co.	Trinity River	Weaverville	50	50
Western States Gas & Electric Co.	South Fork American River	Near Placerville	4,500	
	Trinity River	Junction City	2,150	
				6,650
Grand Total				477,835

TRANSPORTATION

Railroads

The official opening of the San Diego & Arizona Railway, connecting San Diego with Yuma via the Imperial Valley, took place in December, 1919. Government, state and railroad officials from every part of the continent spent a week journeying over the lines of the company, with fitting celebration and entertainment en route.

From the records of the State Railroad Commission, there were operative in the state to date of December 31, 1918, 21 steam railroads with a total mileage of 18,036.73 and 35 electric railways with total mileage of 2,891.62. The mileage given in the following table for the San Diego & Arizona R. R. is not included in the above.

Principal Steam Roads

Name of Company	Mileage
Atchison, Topeka & Santa Fe Railway Co.	8,643.19
Southern Pacific Co.	7,049.24
Northwestern Pacific Railroad Co.	507.06
Western Pacific Railroad Co.	420.76
Los Angeles & Salt Lake Railroad Co.	368.23
San Diego & Arizona Railway Co.	218.00
Nevada-California-Oregon Railway.	162.16
Tonopah & Tidewater Railroad Co.	138.12
Pacific Coast Railway Co.	103.05
McCloud River Railroad Co.	74.60
Sunset Railway Co.	59.66

Principal Electric Roads

Name of Company	Mileage
Pacific Electric Railway Co.	1,092.4
Los Angeles Railway Corporation.	387.8
United Railroads of San Francisco.	287.69
San Francisco, Oakland Terminal Railways.	262.87
San Francisco-Sacramento R. R. (formerly Oakland, Antioch & Eastern).	123.06
Sacramento Northern Railroad Co. (formerly Northern Electric Railway Co.)	
San Diego Electric Railway Co.	87.33
Peninsular Railway Co.	80.79
Central California Traction Company.	77.81
Visalia Electric Railroad Co.	74.32
Tidewater Southern Railway Co.	65.20
San Francisco, Napa & Calistoga Railway.	44.76
Petaluma & Santa Rosa Railway Co.	43.62

Steamship Lines

The wonderful industrial growth during the past two years is more fully discussed in previous pages devoted to the harbors of California, but it is reflected in the number of freight and passenger lines which are making our ports of call and the demand for California products for every country of the globe. Thirteen steamship lines are operating passenger or freight service through the Panama Canal from San Francisco to Atlantic Coast and European ports—Balfour, Guthrie & Co., Bank Line Transport & Trading Co., Dodwell & Co., E. C. Evans & Sons. Inc., W. R. Grace & Co., Hind, Rolph & Co., Luckenbach Steamship Co., G. W. McNear Inc., Norway Pacific Line, Pacific Mail S. S. Co., Standard Oil Co., U. S. Shipping Board and Williams, Diamond & Co.

Twenty-seven lines ply between San Francisco, the Orient, South Sea Islands, Vladivostok and Australia, Philippine and Hawaiian Islands, including both passenger and freight boats, or freighters or tankers only: J. D. Spreckels & Bros.

Co., Mitsui & Co., China Mail S. S. Co., Toyo Kisen Kaisha, Gulf Mail S. S. Co., Matson Navigation Co., Pacific Mail S. S. Co., Struthers & Dixon, Overseas Shipping Co., Burns Philp Co. of San Francisco, J. J. Moore & Co., Wightman & Crane, Philippine Vegetable Oil Co., A. Chiris & Co., Union Steamship Co. of New Zealand, Ltd., Comyn Mackall & Co., Robert Dollar Co., Trans-Oceanic Co., American Trading Co., G. W. McNear Inc., Sanders & Kirchmann, George Wills & Sons, Ltd., George E. Billings, Standard Oil Co., Pacific Commercial Co., Henry Gray & Co., Atkins Kroll & Co., Ocean Shipping Agencies and Oceanic Steamship Co.; while Hind, Rolph & Co., Pan-American Line, Rolph Mail S. S. Co., West Coast S. S. Co., Sudden & Christenson, Gulf Mail S. S. Co., A. O. Lindvig, Swayne & Hoyt, and Compagnie du Beleo operate boats to Mexican and South American ports, although the majority of these are exclusively freighters.

It is the intention of the U. S. Shipping Board to allocate twelve new 17-knot oil burning ships with the most modern passenger carrying accommodations and 11,000 tons deadweight capacity, for regular schedule sailings weekly for Japan, China, Vladivostok and the Philippines and every three weeks for the Philippines, Straits and India from San Francisco. Nineteen of these vessels are now under construction and it is anticipated the first for the Pacific duty will be available about May, 1920.

Surveyor of Customs John S. Irby states that despite war-time conditions passenger traffic through this port has increased. In 1919, 51,674 passengers entered this port contributing \$61,243 on dutiable articles; in 1918 42,003, paying \$41,887 duties.

Auto Stages

Auto stage lines and truck service have become general in the past year, not only throughout the isolated communities, but are formidable competitors of the railroads in many districts. During the car shortage of the past year, many fruit and vegetable shipments were saved from total loss by this means. There is hardly any section of California or southern Oregon one may not reach by auto stage.

The operating companies are:

Name of Line	Operating Between
Colusa and Williams Auto Stage Co.....	Colusa and Williams.
Raymond A. Davis Stages.....	Nevada City-Sacramento.
El Dorado Stage Co.....	Los Angeles-Bakersfield.
Fresno-Kingsburg Stage Co.....	Fresno-Kingsburg.
Fuller, O. R.....	Los Angeles-San Diego via Coast Highway and Montebello, Whittier, La Habra, Fullerton, Anaheim, Santa Ana, Tustin.
Horseshoe Route.....	Merced to Yosemite National Park.
Hunt, H. M.....	Ventura-Ojai.
Kern County Transportation Co.....	Bakersfield-Taft.
King River Stage and Trans. Co.....	Fresno-General Grant Nat. Park and Home via Sanger.
Los Angeles-San Pedro Trans. Co.....	Los Angeles-San Pedro.
McConnaha's Auto Stage Line.....	Crescent City-Grant's Pass, Ore.
McConnell, E. L.....	San Luis Obispo-San Miguel via Paso Robles.
Molena & Rio Vista Auto Service.....	Rio Vista-Molena.
Moore, J. E.....	Lindsay-Hanford via Tulare and Goshen Jct.
Nelson, Hy, Stage Line.....	Willits-Garberville.
Peck-Judah Co.....	All northern and central California points.
Peerless Auto Stage & Trans. Co.....	Oakland, Centerville, Newark.
Peninsula Rapid Transit Co.....	San Francisco-San Jose via San Mateo.
Pickwick Stages.....	San Francisco-San Diego via San Joaquin Valley and Los Angeles.
	Santa Maria-Maricopa.
Pierce Arrow Auto Stage Line.....	Sacramento-Lake Tahoe via Placerville.
	San Francisco-Los Angeles via both Coast and Valley routes.
Placer Auto Stage Co.....	Auburn-Nevada City.
Reno-Loyalton Auto Service.....	Reno, Nevada-Loyalton and all points north to Oregon state line.
Schafer, John.....	Red Bluff-Gerber.
Bill Spiers Auto Stage Line.....	Callistoga-Lakeport.

	Lakeport-Lower Lake, Kelseyville, all spring resorts in Lake County, Middletown, Harbin, Anderson, Mira Vista and Clear Lake.
Star Auto Stage Association.....	Oakland-Stockton. Sacramento-Stockton. Modesto-Stockton. Sonora-Stockton. Groveland-Stockton. Angels Camp-Stockton. San Jose-Stockton. Tracy-Stockton. Jackson-Stockton. Walnut Creek-Stockton. Sacramento-Auburn. Sacramento-Placerville. Modesto-Turlock. Modesto-Merced-Fresno. Modesto-Oakdale. Modesto-La Grange. Modesto-Newman.
Thompson, George F.....	Fresno-Kerman via Barstow, Biola and Vinland.
Western Auto Stage Company.....	San Francisco-Los Angeles via San Joaquin Valley. San Francisco-Yosemite Valley. Bakersfield-San Luis Obispo. Riverside-Elsinore.
White Line Stage Co.....	Same as Horseshoe Route.
Pioneer Line.....	San Francisco-Los Angeles (Yosemite Valley-Mariposa Big Trees)
Yosemite Valley Railroad Co.....	Sausalito-Santa Rosa via Petaluma and San Rafael.
Yosemite Taxicab Company.....	

Automobiles and Motorcycles

From January 1st, to December 5th, 1919, the State Motor Vehicle Dept., received gross \$4,424,991.47 of which \$4,248,206.92 is derived from automobile licenses and \$45,396.40 from motorcycles. California ranks third to New York and Ohio in the number of automobiles owned in the state, 491,240; motorcycles 26,054; automobile dealers 2,989; motorcycle dealers 182; chaffeurs 33,995. This is an increase of 34.6 per cent over the number of machines licensed in 1918.

In 1914 California had but 123,516 automobiles; in 1915, 163,795; 1916, 232,440; 1917, 306,916; 1918, 364,800.

Highways

Manager Ben Blow of the Good Roads Bureau, California State Automobile Association, reports:

"As the result of three state bond issues, aggregating \$73,000,000, California is developing what promises to be a most comprehensive highway system. By the end of 1920 it is contemplated California will have put down 6,000 miles of hard paved roads, including asphaltic and oil construction as well as the permanent concrete highways. Supplementing State appropriations, various counties have in the past six years supplied \$100,000,000 for road building, derived in part from bond issues and partly from current funds.

"Southern California enjoys the justly earned reputation for wide spread highway development. In 1919 three southern counties and eight of northern California issued road bonds, which will balance the road building activities throughout the state, providing a network of good roads for every section.

"The California standard pavement is concrete, the use of oil and asphaltic concrete being only occasional upon roads carrying light travel. During the next six years \$200,000,000 is to be spent in highway construction and maintenance, insuring California's supremacy in highway development. This sum includes State, County and Federal Aid funds. During 1919 eleven California counties voted bonds for highway construction, in addition to the \$40,000,000 voted by the State. Four other counties are contemplating similar action this year and all voted or proposed plans are based upon commercial need. Economical avenues to market rather than strictly touring roads, is the stimulus in agricultural sections."



TYPICAL CALIFORNIA FRUIT ORCHARDS

AGRICULTURE

While California has always been famed for the prodigality of her crops, never in the history of agriculture have they been so bountiful or commanded such prices as during 1919. The figures of valuation and crop production are so past belief, that we fully expect and will welcome, inquiries and challenges from competitive and eastern communities not so fortunate in being chosen by good Dame Nature for the recipient of her bounties.

Total value for products of the soil in 1919 is about \$535,496,000, against \$436,817,000 in 1918. With the subdivision of immense grain ranches for more intensive farming, the extension of irrigation systems and the growing demand for small farms, the grain production will naturally decline from year to year. The greatest revenue however, is still derived from the field crops.

Field Crops

The total acreage harvested in 1919 was 5,881,340, producing 7,627,256 tons with a total farm value to the grower of \$284,483,000. Compare this untold wealth with the 5,914,200 acres producing 6,355,668 tons valued at \$246,599,000 in 1918.

Mr. E. E. Kaufman, U. S. Bureau of Crop Estimates, furnishes the following table of comparisons in field crops of California:

Crop	Acres	Yield Per Acre	Production Bushels *	Price Dec. 1	Total Value
Corn.....1919	87,000	33.0	2,871,000	\$1.79	\$5,139,000
.....1918	85,000	35.0	2,975,000	1.93	5,742,000
Oats.....1919	175,000	30.0	5,250,000	.96	5,040,000
.....1918	175,000	32.0	5,600,000	.94	5,264,000
Barley.....1919	1,000,000	30.0	30,000,000	1.41	42,300,000
.....1918	1,320,000	26.0	34,320,000	1.15	39,468,000
Winter Wheat.....1919	990,000	16.5	16,335,000	2.04	33,323,000
.....1918	506,000	15.0	7,590,000	2.16	16,394,000
Potatoes.....1919	88,000	129.	11,352,000	1.71	19,412,000
.....1918	90,000	143.	12,870,000	1.20	15,444,000
Sweet Potatoes.....1919	8,000	137.	1,096,000	1.79	1,962,000
.....1918	7,000	170.	1,190,000	1.50	1,785,000
Rice.....1919	142,000	55.5	7,881,000	2.67	21,042,000
.....1918	112,000	65.5	7,336,000	1.90	13,938,000
Hay (tame).....1919	2,352,000	1.81	a- 4,257,000	17.20	73,220,000
.....1918	2,376,000	1.25	a- 2,970,000	20.00	59,400,000
Hay (wild).....1919	177,000	1.16	a- 205,000	12.00	2,460,000
.....1918	182,000	.95	a- 173,000	19.00	3,287,000
Hops.....1919	11,000	1625.	b-17,875,000	.77	13,764,000
.....1918	11,000	1136.	b-12,500,000	.20	2,500,000
Beans.....1919	395,000	11.3	4,475,000	4.35	19,466,000
.....1918	592,000	14.5	8,584,000	5.40	46,353,000
Cotton (lint).....1919	167,000	292.0	b-48,817,000	.43	20,991,000
.....1918	173,000	270.0	b-46,710,000	.30	14,013,000
Cotton (seed).....1919	.....	.....	a- 53,000	65.00	3,445,000
.....1918	.....	.....	a- 50,000	60.00	3,000,000
Grain Sorghums.....1919	170,000	25.8	4,386,000	1.54	6,755,000
.....1918	176,000	26.7	4,696,000	1.68	7,889,000
Sugar Beets.....1919	110,900	7.4	a- 821,000	13.36	10,968,000
.....1918	101,000	8.5	a- 858,000	9.95	8,534,000
Onions.....1919	8,440	324.	2,735,000	1.90	5,196,000
.....1918	8,200	350.	2,870,000	1.25	3,588,000

*a- tons, b- pounds.

The pressure for increased food production since 1916, has undoubtedly resulted in better methods of farming, development of more agricultural land and utilization of mechanical aids for fast and efficient handling. The tractor and silo are doing their part toward maximum production in the field, orchard and dairy.

Beans

In 1918, California led the Union in the production of beans, with Michigan second, 543,000 acres from which she produced only about half the California crop. Owing to increased cost of production, hold-over of 1918 crop and water shortage for irrigation, the acreage has declined appreciably the past year. Limas make up about one-third of the production, or about 125,000 acres; small whites one-fifth; pinks a seventh; large whites one-tenth and the balance divided between Red Mexican, Cranberry, Bayo and others. Until recently Southern California counties produced the bulk of the lima crop, but favorable soil and climatic conditions of the lower San Joaquin Valley result in Sacramento County leading with over 75,000 acres, which, however, included limas and other varieties; Stanislaus second with 50,000; Orange, Ventura and Santa Barbara with 48,000, 45,000 and 29,000 acres respectively, almost entirely limas. Orange County produced one-quarter of the limas grown in the state, averaging 1,035 pounds per acre.

Corn

San Joaquin County produced 56 per cent of the corn raised, on about 20,000 acres; Merced County planted 12,000; Kern 10,000 and Kings 8,000. The 1920 forecast is for a big increase which will have an important potential bearing on the quality of our pork.

Broom corn is grown in the San Joaquin and Imperial Valleys and brought \$200 to \$300 per ton in local markets.

Cotton

The famed Imperial Valley is the heart of the cotton growing in California although this year's planting proves that cotton may be profitably grown as far north as Butte County in the upper Sacramento Valley. The lustre and staple of California cotton insures its future. Russia, Japan, South America and China send buyers to our compresses to bid against the eastern mills. Owing to the cost of handling and ginning Egyptian cotton it has not been as extensively grown as Durango long staple and the short staple varieties. The demand from the tire manufacturers, however, acts as a powerful stimulus toward the production of Yuma and Pima varieties, which thrive especially in the Imperial, Palo Verde, Coachella and San Pasqual Valleys. Pima cotton raised in the Imperial Valley sold in Boston during the past season for 62 cents per pound. Prices for 1919 average from 25 to 42 cents to the grower, according to length of staple.

The boll weevil and army worm have thus far been excluded from this state by rigid quarantine and constant surveillance.

The state average is three-quarter (500-pound) bale to the acre, though yields have been attained in the Imperial Valley under exceptional cultural conditions of two and one-half bales per acre.

Of the 169,000 acres grown in 1919, the Imperial Valley planted nearly 85 per cent, which includes that grown in the San Pasqual Valley on the Colorado River opposite Yuma, Arizona, but lying in Imperial County. Riverside County with 22,752 acres in the Palo Verde Valley also irrigated by the Colorado River, and the Coachella Valley, geographically the north end of the Imperial Valley, ranks second in acreage, while first in production per acre with an average of seven-eighths bale. Commercial growing in the San Joaquin Valley is new within the past two years and Fresno County leads with 1,280 acres; Kern 1,200; Butte 500; Tulare and Yuba about six acres in experimental plantings. Fresno and Kern Counties will double their acreage in 1920, planting Pima exclusively, which yields there, an average of 300 to 350 pounds to the acre and commands top price. There were 41,161 bales ginned in California during 1919.

About 52 gins and oil mills are located in the sections where acreage warrants such investment. Compresses where three or four bales for shipment are reduced to the density of one, are located at Calexico, Imperial and Los Angeles. The California Cotton Mills at Oakland have the only cotton spinning mills on the Pacific Coast with 40,000 spindles, for domestic textiles and household goods. The Goodyear Tire & Rubber Company of California is just completing a mill of 33,000

spindles in Los Angeles, the entire output of which will be used in the manufacture of automobile tires.

The exports of bales cotton from the Port of San Francisco during 1919 were valued at \$18,775,967. This is an increase of \$2,260,308 over 1918. The bulk of this came from California and Japan monopolized the trade.

Making of cottonseed oil and cottonseed meal and cake, is a great by-products industry. During the latter half of 1919 the oil market has been disrupted by the importation of oriental peanut oil and measures taken for an embargo, if adequate prices are to be paid growers by the mills. The glutted market and weak demand has lowered the price of \$65 per ton for seed paid during the first half of the year, to less than \$45. Meal and cake have brisk market at all times as finishing feed for livestock or as balanced ration in dairy and poultry house.

GRAIN CROPS

Barley

Barley, the greatest grain crop of the state, comes mainly from the Sacramento and San Joaquin Valleys. Immense tonnage is barged down the two great rivers and with the building of grain elevators, on deep water channels and trans-continental railway lines, the old method of sacking grain will eventually give way to more economical handling. The production of barley is nearly three times as great as in 1917 and California this year produced one-fifth of the crop of the United States, 52,322,310 bushels from 1,744,077 acres, according to the figures furnished by the State Board of Equalization. Of these Yolo County led with 198,100 acres; Solano 180,000; Colusa 170,000; Merced 130,000; Monterey 115,000.

Owing to the light rainfall up to February 1920, many acres formerly cropped to wheat and beans will be devoted to barley. The forecast is for over 2,000,000 acres which should with normal crop net 1,000,000 tons, exceeding previous records by 100,000 tons.

Grain Sorghums and Maize

Egyptian and Kaffir corn, milo maize and feterita are so commonly classed by the California farmer, simply as "corn" that acreages and estimates of production are extremely difficult. It is indisputable, however, that Imperial County leads in the production of milo maize, with 67,816 acres planted in 1919 and San Bernardino with 6,150 acres in kaffir corn.

During the sugar shortage sorghum syrup factories sprung up over the state and owing to the value not only for domestic consumption but as a stock feed, it promises to become an important manufacture.

Under the best methods of farming milo maize will yield two and one-half tons to the acre, while in the Imperial Valley where the climatic condition permits of two crops a season, one and one-quarter tons of winter barley followed by a like yield of milo maize can be taken from an acre. But a small proportion of the milo maize, Egyptian corn and feterita finds its way to market, as it is used chiefly on the ranches where grown as stock feed and ensilage.

Oats

About 175,000 acres out of the 262,959 planted were threshed for grain in 1919. Usually a larger proportion is cut for hay but the season was so favorable and the heading so uniformly full, that the returns as grain were beyond the expectation of the farmer. Counties leading in production were: Sacramento 55,000 acres; San Joaquin 20,000; Yuba 15,600; Solano 15,000; Stanislaus 14,810.

Rice

Seven years ago a few experimental rows represented the rice production and this year, thousands of acres of "goose land" and alkali waste in the upper Sacramento Valley produced a rice crop valued at \$27,000,000. During that time it has been demonstrated that we can grow the long grain rice of the south and successfully compete in eastern markets with the southern producers, once we eliminate the Japanese inferior varieties. Superior seed is the cry at present and inferior seed is responsible for the 1919 crop of 3,250,000 bags instead of the forecast of 4,000,000 early in the season.

The December market closed with fancy California Jap rice in singles selling for \$12.75; \$12.50 for choice; cheap grades and screenings bringing \$6.50 up. This means the grower is receiving six and one-half cents per pound in an increasing ratio according to quality.

In 1918 California ranked fourth in rice production, but this year she rises to second rank, exceeded only by Louisiana and with every promise that within five years she will be producing more than all other states combined. Mr. J. R. Leguenec, Chief of Rice Division, U. S. Food Administration, predicts California will become the leading rice state, with 1,000,000 acres of land available for rice culture.

The yield of 35 bags per acre for 1919 against the 40 bags per acre for last year's crop meant loss of millions, but the crop this year is of superior quality and the loss less, owing to the perfection of harvesting and threshing machinery heretofore in a more or less experimental stage.

The State and Federal Reclamation District No. 108 has appropriated \$200,000 for pumping plants in Yolo County for the irrigation of lands formerly without water and applicable for the 1920 crop.

Shortage of Japan's crop and brisk demand from Europe insures a ready market for the coming season. Some 15 000 tons are reported as having been shipped from San Francisco to the Orient from the 1919 output. Japan, Sweden and Norway are our largest buyers, outside of the California rice mills. More than 55,000 bags were handled on the Sacramento River during the past season.

In 1918 California raised rice on 112,000 acres, which increased in 1919 to 142,000. Forecast for 1920 planting is a third increase if water can be assured. Colusa County alone is planning the planting of 75,000 acres for the 1920 season. In 1919 Colusa County led with 50,000 acres; Glenn 42,000; Butte 37,000; Yolo 15,000 and Yuba 9,245.

The largest rice sale ever made in the west called for 700,000 bags valued at \$4,200,000, to Rosenberg Bros. of San Francisco, for milling and export to fill orders in Japan, Sweden and Norway. This quantity is sufficient to supply the entire United States for a period of two months.

About one-fourth of the state's production composed an order for 15,000 tons valued at more than \$3,000,000 for Sumatra by W. T. Welisch & Company of San Francisco.

Many of the rice mills are enlarging to cope with the increasing production. Their location and capacity are as follows:

Location	Firm Name	Capacity per Diem Bags Paddy Rice
Biggs, Butte County	Arnold & Garrett	1,200
Biggs, Butte County	Pacific Rice Mills	4,000
Chico, Butte County	Sperry Flour Company	2,000
Colusa, Colusa County	Rosenberg Bros. & Co.	6,000
Gridley, Butte County	Rosenberg Bros. & Co.	2,400
Oakland, Alameda County	Golden West Rice Milling Co.	1,200
Sacramento, Sacramento County	California State Rice Milling Co.*	7,000
San Francisco	American Import & Export Co.	1,600
San Francisco	Brandenstein, M. J. & Co.	3,500
San Francisco	Grosjean, C. E., Rice Milling Co.	3,500
San Francisco	Growers' Rice Milling Company	5,000
San Francisco	Iwakami & Co.	860
San Francisco	Pacific Rice Mills	3,500
San Francisco	Pacific Trading Company	1,600
San Francisco	Phillips, M., & Company	3,500
San Francisco	National Rice Mills	4,000
San Francisco	Natoma Milling Company	1,600
San Francisco	Union Rice Mills	1,800
Woodland, Yolo County	Globe Grain & Milling Company	3,000

*Largest on Pacific Coast, second largest in U. S.

Rye

Rye is grown chiefly in the mountain valleys and does not form an important commercial crop of the state. The acreage is decreasing from year to year, owing to the possibility of more remunerative crops on the same soil and the unreliability of rye yields here. The counties which produced the bulk of the crop this year were Merced with 11,500 acres; Siskiyou 10,000; Modoc 8,125; Lassen 3,200; San Joaquin 1,100. The total acreage for the state showed only 37,408.

Wheat

The zenith of wheat production in California was reached in 1901, when 28,751,500 bushels were threshed. Since that year the acreage has been giving way to barley. High germinating seed of good milling quality has been hard to obtain, while the cereal diseases have discouraged the farmer in favor of other crops. Wheat Director Julius H. Barnes of the U. S. Grain Corporation, finds that the spread of price between the producer and consumer of wheat, 1913 to 1918, increased the farm price 166 per cent; that flour increased 118 per cent and bread only 75 per cent. Cargo lots of California blended flour go to Europe in large quantities, as well as South America, the Orient and island territories.

Flour mills are found in all the valleys where wheat is grown on a commercial scale; several are located on the deep water channels of our harbors. While the bulk of the crop comes from the Sacramento and San Joaquin Valleys, the wheat of the mountain valleys is higher in gluten and harder in quality.

A two million dollar flour and food mill, the first of its kind in the west, is being built on the Oakland estuary and will have grain elevator from which ocean going vessels may load with but one handling from the river or ranch shipping point.

About 50 per cent of the flour sent to Europe at the present time comes from California and San Francisco has been sending some 20,000 tons monthly for Russian Armenia.

The acreage for 1920 shows a decrease of over 300,000 acres from the 1,053,656 acres planted for 1919, of which over 93 per cent were cut for grain, the balance for hay. The leading counties in state for 1919 were Solano, 165,000 acres; San Joaquin 100,000; San Luis Obispo 75,000; Madera 68,224; Fresno 66,560.

Hay

It is expected standardization laws for baled hay will shortly be enacted. This will materially increase the value and reputation of California hay crop by enforcing more careful harvesting and baling.

Alfalfa

This is the king of field crops of California and the backbone of the livestock and dairying industries. Of the 972,162 acres of standing alfalfa in 1919, Mr. Fred N. Bigelow, Secretary of the Alfalfa Growers of California, estimates about 85,000 acres furnished the marketed product. Alfalfa production is estimated over 5,000,000 tons for 1919, with an average yield throughout the state of five tons to the acre. This is very conservative, for eight to ten tons to the acre are obtained in sections where six to eight cuttings per season are made.

Alfalfa is grown in every county of the state. Tulare County leads in 1919 with 102,300 acres; Imperial 96,140; Merced 92,000; Kern 90,000; Fresno 68,480. Imperial formerly led but much of her alfalfa acreage has been planted to cotton the past two years.

In normal times, not over five per cent of the hay left the state by rail. During the present car shortage and high freight rates, it is thought the grower will realize better returns by shipping to Atlantic ports in government boats, in the form of alfalfa meal. Eastern demand this season far exceeded that of past years and the valuation of the alfalfa hay leaving the state by rail this year is probably \$2,000,000, bringing from \$5 to \$10 per ton over previous years. Many counties show over 100 per cent increase in acreage over 1915—notably San Joaquin, Yolo, Marin, San Bernardino and Monterey.

Prices received by the grower the past year were beyond belief of the most

sanguine prophets of 1913 when the average price was \$8 per ton. Choice lots brought \$35 f. o. b. Los Angeles and San Francisco, with the average for the state of \$19 baled and \$12 to \$13 loose in the stack.

The Alfalfa Growers have been organized but a little over a year and in that time have signed up over 2,000 members representing over 46,000 acres of alfalfa. Branch offices have been established in the principal marketing centers of the state and every effort bent to the efficient merchandizing of the crop, not only of alfalfa but milo maize and Egyptian corn, of which some 12,000 acres represent membership. Their influence was strongly felt in fostering the Pure Seed Bill recently passed by the State Legislature, which insures the California alfalfa grower certified and clean seed, thereby eliminating his chief obstacle to increased planting in the past. The growing of alfalfa seed is adapted and highly profitable in many certain sections of the state, where sub-irrigation is enjoyed. For report on production see Seeds, page——

Hay

It would be misleading to state that the 1,073,824 acres listed by the State Board of Equalization were cut or even planted exclusively for hay in 1919. The majority of our farmers cut for grain if the stand is full and the crop heads well. Occasionally weather conditions, disease, lack of harvesting machinery or labor at the critical time force them to utilize the crop as hay. California grain hay cut in the milk is famed for its nutritive properties and commands a choice price and constant market. On foothill land where the crop is allowed to volunteer, and in the mountain meadows where the lush timothy, wild clover and grasses finish the sweetest beef shipped to market, the product is classed as wild hay. This will run not over seven-eighths of a ton production to the acre, where our grain hay will average for the state about one and one-half tons to the acre, and brought this year from \$19 to \$25 per ton according to demand and quality. The crop for the state is valued at \$35,436,390, about 40 per cent of which was shipped out. Leading hay producing counties in 1919: Monterey 95,000 acres; Sacramento 70,000; Alameda 65,000; Solano 63,000; Sonoma 62,180.

A great variety of forage grasses may be grown in California and the overstocked condition of many ranges, points to increased planting. Sudan Grass is a quick maturing forage and hay crop and will yield with careful cultivation from four to seven tons of dry feed per acre.

Hemp, Flax and Fibres

In favorable localities along the Sacramento and San Joaquin Rivers, hemp and flax may be produced. It is only a question of interesting sufficient capital to promote the manufacture of articles from these valuable textiles, before California could take a prominent place. Yields of 1,500 to 1,800 pounds of hemp to the acre are possible and when properly handled the fibre is long, clean and silky. No cultivation is necessary and it is one of the easiest crops to raise. The California Cotton Mills and Zellerbach Paper Company utilize the bulk of the hemp raised in the state for binder twine, sacks, etc. The shortage and high price of cotton will probably result in increased production of this commodity.

While yields of flax are enormous and many districts suitable for its production, the demand is light.

Recently the manufacture of twine and cordage from decardicated yucca fibre, has been commenced at Riverside. Inasmuch as there are available an unlimited amount of this species of Spanish dagger plant on the desert areas of Southern California, it should assume important proportions once its worth as a textile is proved.

Brushes from roots of a wild shrub, native to the regions about Tomales Bay, is an interesting manufacture of Point Reyes Station.

Hops

Since 1915, hop acreage has been decreasing steadily. This year with impending prohibition and uncertain local market, saw but 11,745 acres planted. Quality

of California hops is equal to that of New York and best European varieties and failure of crop in the Sacramento Valley has never been known.

Contrary to early predictions, heavy planting is being made in 1920 to supply foreign demand. Half the 1919 crop went to France, England, China and Japan at an average price of 50 cents per pound to the grower the first half of the season, with 60 to 80 cents for the last shipments. The entire crop of Sacramento County has been contracted for at 36 cents per pound until 1923. Yield for the state was about 89,375 bales valued at \$7,150,000. The E. Clemens Horst Company, largest hop producers in America and large dehydrators of vegetables, are replanting their old and newly acquired acreage in 1920.

The largest commercial growing sections this year are Sonoma County with 2,930 acres; Sacramento 2,500; Mendocino 1,000; Yolo 1,000 and Tehama 425.

Melons

California leads the Union in cantaloupe production for several years past. The Imperial Valley with its early crop, grown by Japanese commands top prices in choice eastern markets. Seed comes from Rocky Ford, Colorado, and growers are often financed, supplied with labor, seed and farming implements by the jobber contracting his crop. The U. S. Bureau of Markets handles the entire output of the Imperial Valley.

Shipments from the Imperial Valley begin to move about the middle of May, a month earlier than other sections, which gives that territory a unique advantage. Of the 25,000 odd acres planted in 1919, Imperial Valley easily took first place with 14,088 acres, 10,000 of which were grown in the Brawley district. This was an increase of 3,000 acres over 1918. Forecast for 1920, 19,148 acres. The phenomenal growth of this industry is shown by the following table:

	Season	Acreage	Shipments	Yield of Shipping Stock per Acre
Cantaloupes in the Imperial Valley	1915	8,156	4,722 Cars	194 Crates
	1916	8,492	4,617 "	182 "
	1917	12,939	5,041 "	130 "
	1918	10,896	4,402 "	136 "
	1919	14,088	7,832 "	175 "

From this enormous production it is estimated the grower received a net return of \$1,710,072. Early shipments sold in New York as high as \$15 per standard crate and averaged around \$5.50 to \$6.00 for the entire season.

Imperial Valley also produced about 13,000 tons of watermelons from 800 acres, netting the growers some \$66,240.

The Turlock District in Stanislaus County within a few years will press Imperial for first honors in cantaloupe production. In 1916 Turlock had but 3,000 acres; in 1919 nearly 4,600 cantaloupe and over 2,000 casabas, honey dew, Persian and watermelon. The Turlock Board of Trade reports for 1919 shipments:

Melons	No. Cars Shipped	Average Price to Grower Per Car	By Express Crates
Cantaloupe	2,719	\$400.	50,316
Watermelon	1,037	175.	.....
Casabas	296	200.	30,829
Honey Dew	31	400.	.....
	4,083	\$293.75	81,145

It is estimated that fully the number of casabas and cantaloupes shipped by express, went out by automobile trucks for local markets.

Other counties prominent in melon production were Merced with 2,240 acres of cantaloupes and 1,450 other melons; San Joaquin 700 and 300; Fresno 180 and 320 respectively. It is estimated 1,689 car lots of watermelons were shipped out of California for the 1919 season.

Onions and Potatoes

The full crop of onions was taken from 6,570 acres; 5,960 of which lay in the delta region of the San Joaquin and Sacramento. Compared with 1,412 acres in 1918, the Imperial and Coachella Valleys produced together only 865 acres of Bermuda Onions in 1919. Yields ran from 200 to 300 sacks to the acre and the price of \$4.00 on the levee along the northern rivers, surpassed all previous records. The average for the season in all sections, however, ran about \$3.10 to the grower. The acreage of central California was about 600. Estimates of entire production are difficult to obtain, owing to the large quantity held in warehouses and disposed of locally.

The potato acreage throughout the U. S., with the exception of Pennsylvania, declined in 1919. The delta lands produced about 95 per cent of our commercial shipment of 5,260 carloads, but every district showed a decrease in planting this season. Average yield for the delta region is about 155 bushels per acre. Last year over 6,200 carloads were shipped out of the state. The increased cost of labor, fertilizer and operation of farm machinery is probably responsible for the decline, although the forecast for the 1920 planting does not promise an increase to judge from early reports, as we go to press. Onions and potatoes have always been handled by the buyers from commission houses in San Francisco and Los Angeles and with a possible association, both crops would be more stable and statistics easier to obtain.

Early potatoes showed increase in planting over the previous season. San Joaquin County will harvest 20,120 acres; Contra Costa 7,680 and Solano 29,200 compared with 25,500 in 1918. Turlock, where a large drying plant has been installed the past year, is the heart of the sweet potato industry. The Sweet Potato Growers' Association reports the 1919 crop 45 per cent normal. About 40 per cent of the crop went to the cannery and 1,250 carloads moved. While sweet potatoes are grown in many sections to meet local demand, the very perishable nature of the crop makes necessary a large commercial acreage to warrant the investment for drying plants.

Seeds

By MR. S. S. LAWRENCE, in charge Field Station Seed Reporting Service,
U. S. D. A. November, 1919.

California is pre-eminently the vegetable and flower seed producing state of the Union in many varieties that require long ripening period. Our fertile soil and ideal climatic conditions produce an abundant yield of high quality seeds of strong germination. For years California has been considered an important source of world supply. Contracts are placed by European buyers after inspection of our growing fields and to-day our seeds are being distributed throughout the world. Especially since the beginning of the war when the European supply was reduced to a minimum, has this state been called upon to furnish an abundance of vegetable seed to meet the requirements of our allies in addition to our own needs. The sincere efforts of local seedmen to build up depleted seed stocks of the allied nations should not escape appreciation.

The harvest of 28 different kinds of vegetable seeds in 1919, from approximately 44,000 acres, represents 18½ per cent of the total acreage of the United States in those varieties. This year the acreage increased eight per cent over 1918. We produced approximately 86 per cent of the garden beet; 85 per cent of the mangel beet; 99 per cent of carrot; 100 per cent of celery; 100 per cent of endive and lettuce; 96 per cent of onion; 100 per cent of parsley; 98 per cent of parsnip; 48 per cent of radish; 100 per cent of salsify; also the larger portion of flower seed grown in the U. S.

The localized districts are the delta country, formed by the confluence of the San Joaquin and Sacramento Rivers; the Santa Clara and Hollister Valleys, embracing Santa Clara and San Benito Counties, small valleys along the coast in San Luis Obispo, Santa Barbara and Ventura Counties; Orange and Los Angeles Counties. The Imperial and Coachella Valleys normally produce the bulk of the

Bermuda seed crop, but the 1919 planting was only a score of acres in the Coachella and a few independent plantings in the Imperial Valley. The acreage in the former for 1917 was 90; 1918, 140. Thrips and sunburn seem responsible for the small yield of 3,500 to 4,000 pounds for the entire state, only a small percentage of which was Crystal White Wax, the balance being Yellow Bermuda. This, however, commanded a price of \$2.00 to \$3.00 per pound for re-cleaned seed.

Follows list of estimated production, valuation, and comparative acreages of vegetable seed for 1918-19.

COMPARISON OF CALIFORNIA VEGETABLE SEED ACREAGE 1918-1919

Crop	1918		1919		Average Price per Lb. Calif. Market	Estimated Production Pounds	Estimated Valuation of Crop
	California	United States	California	United States			
Beans—Dwarf snap.....	2,606	70,868	2,265	48,379	\$0.27	1,006,000	\$ 271,620.00
Beans—Garden pole.....	4,989	6,297	5,948	7,957	.37 ½	2,974,000	1,115,250.00
Beet—garden.....	2,458	2,748	2,240	2,621	1.36	1,668,000	2,132,480.00
Beet—mangel.....	272	418	529	621	.77 ½	602,650	389,553.75
Beet—sugar.....	739	6,014	689	10,264	.90	826,800	661,440.00
Cabbage.....	20	974	5	1,973	6.53	3,500	22,855.00
Carrot.....	4,609	4,622	3,051	3,072	1.25	2,135,700	2,669,625.00
Celery.....	175	175	135	135	5.08	62,660	318,262.00
Cucumber.....	59	3,053	235	3,582	1.90	70,500	133,950.00
Kale.....	.....	71	12	106	2.04	4,800	9,792.00
Lettuce.....	2,276	2,276	2,283	2,283	2.23	570,750	1,272,772.50
Muskmelon.....	49	1,558	123	1,461	1.35	24,600	33,210.00
Watermelon.....	74	10,522	136	5,481	1.45	34,000	4,930.00
(Onion Seed.....	6,882	7,233	6,446	6,715	3.38	2,256,100	7,625,618.00
Parsley.....	155	155	146	146	1.25	52,560	65,700.00
Parsnip.....	255	269	299	305	1.50	225,000	337,500.00
Peas—Garden.....	1,889	104,555	9,967	105,018	.38	4,983,500	1,893,730.00
Pepper.....	92	715	25	160	5.85	5,000	28,250.00
Pumpkin.....	189	1,490	271	1,136	1.30	54,200	70,460.00
Radish.....	3,345	8,646	5,170	10,864	1.80	2,068,000	3,722,400.00
Salsify.....	123	123	205	205	2.75	82,000	225,500.00
Spinach.....	1,069	3,942	824	1,139	1.25	329,600	411,500.00
Squash—summer.....	179	916	492	1,153	1.25	98,400	123,000.00
Squash—winter.....	667	2,539	1,026	2,897	1.40	256,500	359,100.00
Sweet Corn.....	304	13,934	242	13,938	.40	145,200	58,080.00
Tomato.....	735	4,024	745	3,597	4.60	149,000	685,400.00
Turnip—English.....	107	766	177	1,240	1.20	124,900	149,880.00
Turnip—Swede.....	.....	271	11	205	1.42	7,700	10,934.00
	34,408	259,174	43,697	236,653	\$1.962	20,621,610	\$24,902,792.25

The production of alfalfa seed is divided into four sections of California, namely northern, north central, south central and southern. The acreage has decreased during the past two seasons owing to the enforcement of the new Pure Seed Law, which prohibits the marketing of alfalfa or other seed, containing dodder, which was the bane of the northern and southern alfalfa seed growers. The acreage is difficult to even estimate because no fixed rule for the harvesting of the crop for seed maintains. If the land is sub-irrigated as in the sections producing the heaviest crops, the first cutting of the season is made for hay and the succeeding growth allowed to seed. In the mountain sections two crops of hay and one of seed is the rule, while on the more favorable valley soils two cuttings for seed and three or four for hay are made. The seed from the higher altitudes, however, seems stronger in germination. The chief variety grown is the Chilean, although the past two years have brought a brisk demand for the Hairy Peruvian. During the 1919 season the northern sections harvested 93 per cent of their usual acreage, while the north and south central, cut only about half, with southern California threshing 75 per cent. In 1918, a normal year, about 800 tons of alfalfa seed were produced, 175 tons of which went to eastern markets and 500 tons were imported from Arizona and Utah. The past year not over 600 tons valued at \$556,000 have been cleaned, 200 of which is already contracted for by eastern dealers. Not more than 200 tons from Arizona, which is also short on this crop, are available for California planting which will reduce the amount on hand in 1920 over 40 per cent of last year's planting, of 1,125 tons.

Sugar Beets

In sections favorable to the growing of sugar beets, the sugar companies have expended large sums, not only in factories but in development, entomologists, irri-

gation, drainage and financing the small grower until started. This heretofore has been a very important crop, but in 1919 owing to the high rental of land, water shortage, lack of rain, labor costs, etc., the acreage planted was 137,695, of which only 110,900 were harvested. The leaf hopper and water shortage were responsible for the loss. Sugar content was higher than the year previous, when 845,728 tons were harvested from 101,000 acres; average yield per acre 7.3 tons against 9.55, average for the past nine years. In 1919 the counties leading in planting were. Orange 30,000; Monterey 29,000; Ventura 10,800; San Joaquin 10,000; San Luis Obispo 9,500.

Factories contract for beet acreage before planting and the price is based on 15 per cent sugar content, the grower receiving more in proportion to the sugar percentage. Beet tops fed to livestock form one of the important side lines of the industry. Dried beet pulp is sacked and in great demand as a finishing feed. Large stockyards are often located near the factory and the fresh pulp bought by the ton for "feeders."

The crop in the San Joaquin Valley was a failure and the Pingree Sugar Company at Corcoran, Pacific Sugar Corporation at Tracy, San Joaquin Valley Sugar Company at Visalia, the Sacramento Valley Sugar Company at Hamilton City and the Chino factory of the American Beet Sugar Company have closed their factories, nor will they contract for 1920 crops. The New Delhi factory of the Holly Sugar Company did not run for the 1919 season on account of crop shortage. This makes but ten factories operative this year:

An average of 4,500 pounds of sugar per acre is the state average. The grower this season received about \$15.50 per ton for sugar beets, subject of course to variation according to their sugar content.

Tobacco

The raising of tobacco in Yolo, Fresno, San Joaquin and Marin Counties is assuming commercial importance. Entire production is of the Turkish variety and yields run from 300 to 800 pounds to the acre, which bring about 80 cents per pound cured, on local markets. In the two counties first named, the future of the industry seems assured.

About 1,000 acres will be planted for 1920.

Truck Crops

Vegetable production is a highly specialized form of agriculture and calls for untold hand labor, with no season of rest, as the crops are constantly rotated. Italian, Japanese and Chinese produce the bulk of our vegetable crop, 75 per cent of which is on rented land or land worked on shares. From a modest beginning, California has gained ascendancy through the closer related efforts of growers and marketing of the crop through the California Vegetable Union, until the annual output of truck from all parts of the state, totals 40,000 cars a year. Much of our early truck goes to eastern markets at fancy prices, the bulk of the tomato crop is handled by the canneries in the state and local demand must also be met.

The exigencies of light and compact shipment for our allies, brought much development in dehydration. The E. Clemens Horst Company produced during the year ending June 30, 1918, 4,500,000 pounds of evaporated potatoes; 350,000 onions; 200,000 carrots; 80,000 each turnips and spinach; 25,000 cabbage; 10,000 rhubarb and about an equal amount of celery and sweet potatoes. This company has a world-wide market as a result of their war-time activities and own and lease thousands of acres for the production of their vegetables, both in California and southern Oregon. Several other large plants have installed evaporators, notably the California Packing Corporation, Atascadero Land Holding Corporation, Libby, McNeill & Libby, Golden State Canning Company and many smaller concerns.

Artichokes

The acreage suitable for the successful production of this crop is limited as a combination of rich soil and plentiful water supply at all seasons must be assured. San Mateo County produced the bulk of the commercial crop from about 4,200

acres, producing 120,000 crates, which returned to the growers approximately \$1,500,000 or \$12.50 per crate.

The southern California production centers around Los Angeles and is mostly consumed locally.

Asparagus

The greatest asparagus beds in the United States lie in the delta regions of central California. About two-thirds of the crop is canned and records for several years past show:

	1916	1917	1918	1919
Canned cases.....	999,740	965,708	902,236	1,031,269
Canned pounds.....	47,555,520	57,444,576	41,998,650	47,747,755
Fresh consumption.....	17,268,500	15,600,000	14,147,500	15,915,919

The Imperial Valley crop is all sold fresh and comes on the market two months in advance of other sections. Chicago and New York are its principle markets at fancy prices in two pound bunches. During the early part of the 1919 season, a carload was sold in New York for \$6,000. The 1917 production was 688,125 pounds; 1918 566,125 pounds; 1919 566,000 pounds.

In acreage Sacramento and Contra Costa Counties lead each with 5,000 acres; Solano 3,000; Imperial 824 and Alameda 325. A large canning company contemplates planting a 3,500 acre tract near Walnut Grove in Sacramento County during the coming season, which will produce for the 1921 pack. Contracts for the 1920 crop range from 6 to 8 cents per pound, against 3 to 5 cents for last season's.

Cabbage, Cauliflower, Broccoli and Brussel Sprouts

The peak of production comes during December, January and February. During 1918, 2,173 carlots left the state; in 1919 1,584, 1,164 of which went from Los Angeles County. This was exclusive both years of an immense tonnage consumed locally. The past two seasons Los Angeles County has 4,800 and 3,450 acres of cauliflower; San Mateo County 1,600 and 1,300 respectively. In the south the bulk of the crop is grown by Japanese and Chinese; in the San Francisco Bay region Italians. Los Angeles and Orange Counties are increasing their cabbage acreage for the coming season by 2,000 acres each. San Francisco and San Mateo Counties are large producers of these three vegetables, the bulk of which goes to local markets.

Celery

Heaviest carlot shipments come in December and January, with the delta district of central California producing more than half of the commercial crop. Last season California shipped 1,480 carloads from 2,121 acres in central California and 707 acres in Los Angeles and Orange Counties. The principle shipping points in the state are Antioch, Walnut Creek, Sacramento and Stockton, in Central California; El Monte, Los Angeles, Smeltzer, Compton and Newmark in the south of the state. For the 1919-20 season 2,047 acres more, or 4,168 were planted in the state, of which 750 were in the El Monte District, 175 in Orange County and 100 in other southern sections, the balance in the delta region. The majority of our commercial shipment runs large size, averaging a carload (about 172 crates or 1,000 to 1,200 dozen bunches) to the acre. Opening prices range from 55 to 75 cents a dozen for this season.

Garlic

About forty carloads of garlic will be shipped this season from both the Los Angeles and the San Francisco Bay Region. Local consumption is heavy and acreages difficult to obtain because the planting is scattered, production uncertain.

Lettuce

Small acreages of commercial lettuce are found in Yolo, Sacramento, Orange and Riverside Counties, but the bulk of the lettuce production comes from Imperial Valley and Los Angeles County. The former has 2,630 acres of winter crop with 9,000 for the spring harvest, while Los Angeles County is harvesting from 2,400 acres as we go to press, with 1,300 heading for the spring crop. The acre-

age for the state is about double that of 1918 and the grower this year is receiving \$2.00 to \$2.50 per field crate—almost double the price of former years.

Mixed Vegetables

From January 1st, to October 27th, 1919, northern California shipped 1,699 carloads of miscellaneous vegetables including turnips, beets, carrots, parsnips, etc., while southern California sent out 2,781 carloads in the same period.

Central California is growing 400 acres of rhubarb, while the Imperial and Coachella Valleys are cutting spinach from about 260 acres for the winter demand.

Winter peas come from 980 acres in the Imperial Valley and the warm belts along the southern coast in Orange and San Diego Counties. About 85 carloads will move from the Imperial Valley for eastern shipment this season and the production from other favored districts go to local centers. About 10,610 acres were planted in 1919, which included summer peas, most of which go to canneries. Leading in production of summer peas were Santa Clara County with 4,500 acres; Monterey 2,500; Stanislaus 900; Alameda and San Mateo Counties, each with 750, part winter peas.

Peppers

In 1910, but 417 acres were devoted to the growing of peppers. This season Orange County, the heart of the pepper industry, has over 5,600 acres of which 1,500 are Pimiento or sweet peppers, Mexican chili 2,800 and the balance long red and long green. Mr. J. A. Knapp of the Garden Grove Chili Association, reports that the yield of sweet peppers or pimientos about 7,000 tons; long green 2,500 of which 700 tons will be canned, evaporated or dehydrated, while 2,000 tons of the California Mexican long reds will be evaporated and dehydrated. Modern methods of dehydration are accountable for extended planting for 1920, as the product is a great improvement over the old evaporated or sun dried pepper. But few sections are suitable to the commercial production of peppers although enough are grown for local demand as fresh relish, in various sections scattered throughout the state as far north as Butte County.

Tomatoes

From the viewpoint of the canner, tomatoes are the most important vegetable crop in this state. Over 90 per cent is canned and nearly every county produces in commercial quantities. Those leading in acreage for 1919 were: Santa Clara with 8,500 acres; San Benito 4,000; Solano 3,600; San Joaquin 3,000; Riverside 1,261. From the entire acreage of 34,232 in the state, the product of 30,699 acres went to the cannery. Frosts in the north reduced the yield in that section very materially and Los Angeles and Orange Counties sent out the bulk of fresh shipment. The yield per acre averaged 7.9 tons in 1919, compared with 7.7 the previous year. While California ranked second to Maryland for national production in 1918, with 250,300 tons, she takes leading place in 1919 with 242,522 tons, with Indiana, New Jersey and Maryland following in the order of their production. During 1918 1,514 carloads of canned tomatoes left the state while the shipments for the first ten months only, of 1919 showed 1,717 had so far rolled to local and eastern markets, despite the car shortage which is still hampering the filling of eastern orders.

Silk

Experiments in several sections demonstrate that silkworms may be successfully raised during a period of six or eight months in California, against the European season of as many weeks. Not, however, until the Seriterre Company began the planting of mulberry trees in the thermal belt of Butte County, did the industry begin to assume commercial importance. This concern has set out 70,000 trees and is transplanting half a million this spring, for the continuance of its successful beginning. The quality of silk produced compares favorably with the best Italian product. The competition of cheap Oriental hand labor is overcome by the use of a modern filature machine, which was imported by the Ladies' Silk Culture Society of California from Italy during the international exposition held here in 1915, and which has since been purchased by the Seriterre Company. In Napa,

San Diego and Riverside Counties, silkworms have been successfully raised. With the expansion of the Butte Co. plantation, it is expected the industry will enlarge, embracing other districts climatically adapted.

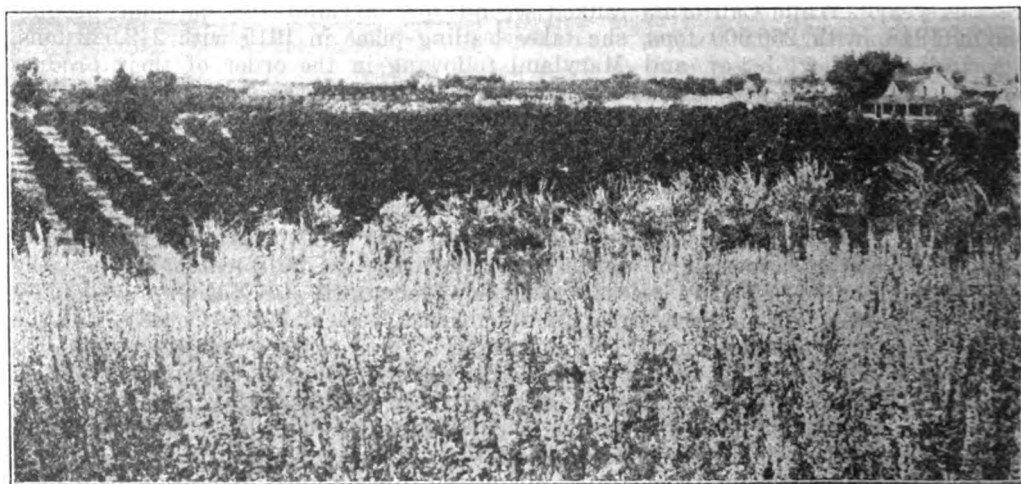
ORCHARD CROPS

During 1919 California fruit growers produced fruit valued at \$234,613,000, which was but \$66,070,000 behind the valuation of field crops for the state; yearly this will decrease as the thousands of acres of young trees come into bearing. The fabulous prices obtained by the fruit growers the past two years have caused such a run on the nurseries, that trees for the 1920 plantings are at a premium. The demand for canned and dried California fruits comes from every country of the world and the supply lacks woefully of meeting the demand. Great Britain, Dutch East Indies, Japan, China, the island possessions, France and South America are among our strongest buyers of canned and dried fruits.

The car shortage has considerably hampered the shipment of fresh fruit to eastern markets, during the season just passed. To obviate this the Pacific Fruit Express Company is building 4,000 refrigerator cars in California shops at a cost of \$15,500,000. These when completed will give their distributing system 19,000 such cars for the yearly increasing crop.

The California Fruit Exchange sold \$10,127,039.91 worth of deciduous fruit during 1919, which was nearly \$3,000,000 more than the best previous year's sales. Forestalling the impending shortage in box shooks the Exchange purchased lumber properties and mills which will guarantee them over 150 carloads of shooks in 1920, besides the purchase of \$800,000 worth of supplies, nearly 70 per cent of which was also shooks.

The bulk of the deciduous fruit shipments go from north of the Tehachapi, although southern California especially in Riverside and Ventura Counties, is coming to the fore as large plantings arrive at a bearing age. Southern California is unquestionably the heart of the citrus industry and largest olive groves.



ORANGE GROVE AND CHERRY TREES IN BLOOM

Commercial Orchard Crops

Fruit	State Production Tons	Value of Crop for State	Disposal			Average Production per Acre	Counties Leading	No. of Bearing	Trees, 1919 Non-Bearing (1) indicates rank in State
			Dried	Fresh	Canned Cases				
Almond	7,017	\$3,508,500	About	1/4 shelled		750 lbs.	Stanislaus Butte Yolo San Joaquin San Luis Obispo	425,500 374,000 325,300 307,798 121,800	172,220 87,200 114,386 475,000 (1)
Apples	207,400	12,528,000	45,000 tons	4,533,000 boxes	2,500 tons for cider and vinegar. 134,245 cases	245 boxes	Santa Cruz Sonoma Riverside San Bernardino Monterey	655,081 286,940 193,400 153,320 107,000	25,941 21,020 117,300 690,835 (1) 4,000
Apricots	165,000	16,500,000 280,000	14,500 tons 7,000	500 cars tons pits	4,395,204 cases	7,353 lbs. Pits, 1/2 weight of yield	Santa Clara Riverside Ventura Solano Alameda	622,000 453,500 300,602 246,100 212,900	43,800 302,500 (1) 295,057 3,000
Cherries	12,400	1,860,000	None	335 cars	460,614	2.29 tons	Santa Clara San Joaquin Solano Alameda Napa	140,000 99,828 99,500 91,500 61,400	120,000 (1) 42,300 2,200 32,655
CITRUS: Lemons	6,000,000 boxes	13,900,000	None	10,023 cars	13,000 tons by-products	207 boxes	Ventura Riverside Orange San Bernardino Los Angeles	348,537 327,750 306,000 296,400 200,623	303,793 (1) 86,550 285,370 78,072
Oranges and Grapefruit	17,894,685	53,654,055	None	39,307	15,000 tons by-products	177 boxes	San Bernardino Tulare Riverside Los Angeles Orange	3,394,760 1,850,000 1,556,190 994,658 990,000	869,320 1,000,000 (1) 150,840 157,191
Olives	14,000	2,800,000	3,000	None	40,000 cases 100,000 gals. oil	1.25 tons Pits, 1/2 to 1-20th weight of yield	Placer Butte Riverside Tulare Tehama	265,180 208,000 135,800 120,000 90,720	6,120 198,400 (1) 75,300 7,500
Peaches	432,000	28,080,000 800,000	35,000 20,000	2,774 cars tons pits	7,058,949 cases	4 tons	Fresno Placer Sutter Tehama San Bernardino	3,750,600 1,226,020 1,181,311 942,697 70,345	9,040 126,500 106,814 6,300 175,620 (1)
Pears	112,475	8,085,925	5,000	4,273	1,071,687	6.03 tons	Solano Santa Clara Sacramento Placer Lake	330,000 189,700 165,000 102,650 49,000	 62,000 40,000 143,600 174,000 (1)
Plums	43,770	2,626,200	.....	2,918	280,261	5.25 tons	Placer Solano Santa Clara Napa San Joaquin	360,570 195,000 111,000 102,870 102,612	82,709 (1) 44,680 38,221
Prunes	337,500	32,400,000	135,000	.....	.....	6.8 tons	Santa Clara Napa Solano Sonoma Butte	6,998,000 890,470 575,000 435,670 308,000	654,000 828,760 (1) 520,780 206,400
Walnuts	26,250	15,000,000	.....	About 1/4 shelled	.....	955 lbs.	Orange Ventura Los Angeles San Joaquin San Bernardino	215,000 196,034 127,913 90,571 52,170	 55,137 79,162 54,905 101,020 (1)

Vegetable Pack

(All grades and sizes)

	Cases	
	1918	1919
Asparagus.....	902,236	1,031,289
Beans, String.....	155,123	154,278
Peas.....	265,970	191,564
Tomatoes.....	3,884,973	3,809,979
Tomato Products.....	1,809,805	885,906
Spinach.....	1,267,713	476,866
Other vegetables.....		501,657
	8,285,820	7,051,519

Fruit and Berry Packs

(Not reported above, all grades and sizes)

	Cases	
	1918	1919
Blackberries.....	119,111	114,349
Grapes.....	99,068	104,446
Loganberries.....	48,992	11,708
Raspberries.....	4,015	233
Strawberries.....	2,002	22,123
Other Fruits.....	432,860	42,584
Total.....	706,048	295,443
Grand Total, Fruit and Vegetable Packs	17,229,557	20,747,922

Almonds

The market for shelled and unshelled nuts has been definitely established and the future of the immense production from acres which will come into bearing within a few years, assured by the efforts of the California Almond Growers' Exchange. The crop was over 40 per cent greater than that of 1918 and double that of 1916.

Apples

Both in 1918 and 1919, California ranked fifth in the Union in the production of apples. In the order of their importance the districts specializing in this crop are:

District	Packed Boxes Fancy Grade	Average Price to Grower		Tons Dried or Canned
		Per Box	Per Ton	
Pajaro Valley, Watsonville Section.....	3,500,000	\$1.75	\$47.50	3,750
Sebastopol:				
Gravenstein.....	241,864	2.35	36.00	4,050
Other Varieties.....	72,733	1.75		
Yucaipa District, Riverside County.....	400,000	1.80	41.75	2,000
Humboldt County.....	50,000	1.50	42.85	700
Ramona and Julian Sections, San Diego County.....	44,000 Net	1.75 Net	10.60	165
Paradise Valley, Butte County.....	11,250	1.75		

Tuolumne County came into prominence this season as a commercial growing section with several hundred acres arriving at the producing age, as will Mendocino and Inyo Counties in 1920.

Rigid enforcement of the Apple Standardization Law is largely responsible for the high price received by the grower and heavy demand from eastern markets. While foreign markets have been accessible, both for dried and fresh fruit, they have this season in the main proved unsatisfactory owing to the unsettled condition of foreign exchange.

Apricots

The Prune and Apricot Growers' Association, which represents 75 per cent of the growers in California, as a marketing factor returned \$22,000,000 to their members for the 1919 crop. Over 1,250 acres came into bearing this season in addition to those harvested last year, while the planting in favorable sections was heavy. Packed fruit brought from \$1.25 to \$2.00 per crate; 14½ cents per pound dry and \$38.75 a ton for pits. Since the war experiments have resulted in the commercial production of oil of apricot or bitter oil of almond, American blue from which Prussic acid is made, a substitute for olive oil and macaroon paste from apricot pits, formerly shipped to Denmark and Germany for \$25 per ton to the grower. The annual tonnage for California's crop runs well over 7,000, which of course will increase.

The Moorepark district, in Ventura County aided materially in making a record crop for the state with large acreage just commencing to bear commercially.

Avocados (Alligator Pears)

Of 140 varieties of avocados grown in California, 54 are native, the balance imports. Southern California and particularly temperate sections are best suited to production. Tulare County marketed quite a shipment from the Porterville district. Several thousand acres in small parcels will soon come into commercial bearing. The extremely high price of the fruit has perhaps acted as a deterrent on market demand, the larger specimens often selling for 75 cents each.

Cherries

This is the first deciduous fruit to come on the market and first shipments have brought \$10 per box in eastern markets for several years past. This season the first box shipped sold for \$50 in Chicago, consigned from Vacaville, the section of earliest and heaviest production. Royal Ann and Black Tartarian are the commercial varieties and eastern markets are always lively for California cherries. About 335 cars were shipped from the state compared with 356 last season. Local markets paid around 15 cents per pound, canneries from 12 to 9 cents per pound as the season advanced.

Citrus

General Manager G. Harold Powell of the California Fruit Growers' Exchange, which handled 72.2 per cent of the citrus crop during the fiscal year ending August 31, 1919, reports, "There has been returned to California for the crop of 1918-19 about \$75,600,000, with a delivered value in the wholesale markets of \$100,000,000, for which the consumer paid approximately \$160,000,000. California produced 35,778 carloads of oranges and grapefruit, and 9,914 carloads of lemons. Of this immense crop the Exchange shipped 33,174 carloads, which on a box basis were: 11,126,985 oranges and grapefruit and 3,728,110 of lemons, a total of 14,855,095 boxes. The operating expenses of the Exchange for the season just past averaged less than ten years ago despite high labor, material, advertising and shipping costs. Sales service of the central exchange cost 4.26 cents per box; district exchanges .0094 cents, or a total marketing service of 5.2 cents per box. In addition two and one-half cents per box for oranges and four cents for lemons were expended by the Exchange for advertising world-wide the famous Sunkist packs. The Exchange now has over 10,000 growers and operates from 133 to 216 associations and district exchanges."

Some 300,000,000 feet of lumber goes annually into box shooks for marketing our fruit crops, and the Fruit Growers' Exchange has forestalled any impending shortage by the purchase of 41,414 acres of timber land in Lassen County, where they will operate a saw mill and box factory similar to the immense plant at Hilt. in Siskiyou County, from which the main supply of box shooks has heretofore been derived.

Grapefruit and Oranges

The shipment for the state the past season is 47,000 carloads, valued at \$1,500 per car. Grapefruit or pomelo, is gaining in favor and the acreage planted is

steadily increasing, especially in southern California. The orange figures includes grapefruit, of which about 650 cars left the state. Marsh Seedless is the chief commercial variety and recent bud selection has improved the quality and sugar content of the fruit.

The yield for 1918-19 is distributed as follows for oranges and grapefruit: Northern California 400 carloads (200,000 boxes); San Joaquin Valley 4,600 carloads (2,300,000 boxes); Southern California 42,000 carloads (21,000,000 boxes). The crop of Valencia oranges and lemons were both the largest of their kind ever shipped from California. Average price of \$3 per box for all oranges was received by the grower.

Lemons

More than 7,000 acres are reported as having come into bearing during the past season to swell the banner crop of 4,673,203 boxes, an increase of 75 per cent over 1918, and 29.5 per cent over 1916-17, the largest crop then produced. The Santa Paula District in Ventura County, led in production, with Whittier, Ontario and San Dimas Districts in Los Angeles County closely following in the order of their importance. Average price to grower past season was \$2.50 to \$3 per box.

The largest individual plantings are the Limoneira Grove, Santa Paula of 1,000 acres, 900 of which are bearing, and the D. O. Mills Orchard Farm Company near Maxwell in Colusa County with 750 bearing and several hundred non-bearing acres. The bearing acreage for the state has more than doubled during the past ten years and plantings are heavy.

By-Products

The Exchange Orange Products Co. utilizes 10,000,000 pounds of fruit a year and the weekly output of marmalade averages three solid carloads of 33,000 pounds each. The Exchange operates a by-products plant in Canada in addition to those at Corona and Redlands.

The California Fruit Growers maintain 45 lemon exchanges and the past season the by-products company organized by the growers handled 15,000 tons of cull lemons and after three years of successful operation returned the initial investment plus \$14,000 for the citric acid manufactured in that period. Until 1916 when war exigencies stimulated development and experiment in this line of manufacture, the U. S. depended entirely upon Italy for her supply. This is but one of four citrus by-products plants in southern California, turning out a total of 50,000 pounds of lemon oil, 500,000 pounds of citrate of lime and 1,500,000 pounds of citric acid besides over 3,000 tons of marmalade, jellies and candied peel, citrus juices and vinegar, annually.

Dates

The Coachella Valley in Riverside County is the only section producing dates in commercial quantities, although extensive plantings have been made in the Imperial and San Pasqual Valleys, which will soon be producing. Experiments in Fresno County where two trees forty years old are still producing edible dates, have resulted there in the planting of 18,000 seedling palms. Imported offshoots were unobtainable during the war which materially retarded planting.

Mr. W. L. Paul, Vice-President of the California Date Association, states that the 1919 crop amounts to about 200,000 pounds, which brought from 15 to 75 cents per pound at the packing house, according to grade and variety. The Association completed the first date packing house in the U. S. at Coachella during November, 1919, which marketed the output of the valley in attractively packed boxes and date by-products. The crop met a ready market and many orders are booked for next year's production.

Mr. William B. Parker of the Holmes Date Gardens at Indio, is one of the pioneers of the industry and importer of the favorite Deglet Noor, Tazazaoot and Persian varieties which are adapted to California conditions. He states that the average yield is 100 pounds per 10-year or older tree, although many palms produce from 300 to 400 pounds of merchantable fruit. From an acre of 45 female trees, with conservative estimate of 100 pounds per tree selling at 20 cents per

pound, the grower would realize \$900 gross return, while the sale of offshoots from imported or proven stock brings from \$25 to \$50 each.

Figs

Fresno County for the past two seasons has produced about 80 per cent of the commercial crop, which this year was estimated at 10,000 tons, an increase of 1,000 tons over 1918. Of this 7,000 tons were Adriatic and brought 15 cents per pound; 1,500 tons each of Smyrna and Black Mission, bringing 20 and 13 cents respectively. Big plantings are under way for 1920, especially of Smyrna. Of the dried production for the state 11,000 tons were sold as follows: White 8,000 tons; Calimyrnas (Smyrna) 1,500 and Black Mission 1,500.

Olives

Oldest and most historic fruit crop of California, introduced by the Mission Fathers in the 17th century. The Sylmar grove in San Fernando Valley is the largest in the world, comprising 1,500 bearing acres and several hundred not yet producing. Olives thrive in nearly every county of the state and will produce on land too dry and unproductive for other fruit. Of the 1918-19 crop about 7,200 tons were processed in the ripe state.

Mr. J. J. Hoey, Secretary Californi Olive Association, reports, "432,000 cases of six gallons each, selling at \$7 per case wholesale brings the valuation of the processed ripe olive output to \$3,024,000; approximately 3,000 tons processed in salt (Greek cure), producing 2,000 tons, selling at 20 cents per pound, \$800,000; 40,000 cases of minced or deviled olives value \$6 per case \$240,000; 100,000 gallons olive oil at \$4.50 per gallon, value \$450,000. We estimate the value of the 1918-19 crop to growers at \$1,512,900."

Growers received an average of \$170 per ton for their crop of pickling olives and from \$60 to \$88 for oil olives, which include the pickling varieties bruised by winds or birds, too small in size or damaged by frost. The Ehmann Olive Company at Oroville, were the first manufacturers of ripe olives and from a modest beginning their plant is one of the largest in the world.

More than 4,300 acres came into bearing for the past harvest, and the next season will see an even greater increase to the bearing acreage.

Peaches

Growers averaged \$60 per ton for their peach crop, with a very active market for canning peaches, especially Tuscan Clings which went as high as \$90. About 2,775 cars of green fruit left the state, which was a decrease in rail shipments of 362 cars in 1918. Dried fruit brought the grower an average of 11 cents per pound, although many tons were contracted at 18 cents. England and Japan had large advance orders for canned and dried peaches.

Sutter County came to the front with a banner crop of 35,000 tons, nearly double her production for the previous season. Fresno, Kings and Tulare Counties are credited with producing 40 per cent of the state's crop.

The California Peach Growers have stabilized the dried fruit market and much of the business is in futures, while demand for fresh fruit is always brisk in local and eastern markets. The diseases which have so materially reduced the crop in other states, do not attack the peach here.

Pears

According to figures of the U. S. Bureau of Markets, California produced 48.5 per cent of the pear crop in the United States. Approximately 4,273 carloads left the state and some of our early or choice pears from the mountain districts brought \$6.20 per box in New York. Growers averaged \$73 per ton throughout the state, while choice canning pears brought \$85, eastern shipments sold at auction \$90 to \$100 in the east and windfalls marketable for drying brought \$35. About 30 per cent of the crop is sold to canneries, half marketed fresh and 20 per cent dried. Heavy windstorms and loss in warehouses due to car shortage, materially reduced the tonnage of choice fruit.

The bulk of the crop comes from the bottom lands of the Sacramento Valley,

while Lake County is the home of the dried pear industry. This fruit adapts itself well to lands poorly drained or with excessive moisture, where cold would toll the knell of other fruits.

The California Pear Growers' Association is campaigning for the popularity of the dried pear with result that orders especially from Europe have increased encouragingly the past two seasons.

Persimmons and Pomegranates

In Tulare and Placer Counties, the Ojai Valley in Ventura County, the Palo Verde Valley (Riverside County) and scattered plantings in sections climatically adapted, the persimmon bears prolifically. The fruit is delicate and must be marketed quickly. Japanese varieties are most desirable for this state and run very large. Demand is light and the popularity of the fruit not established.

Some pomegranate shipments were made through the Tulare County Citrus Fruit Exchange this year, which averaged the grower a return of \$2.72 per box. The Greek and Turk colonies of Chicago afford a constant market. The bushes are hardy and may be grown in many sections but the largest plantings occur in the Sacramento Valley, Tulare, Fresno, San Joaquin and Riverside Counties. One producer of Tulare County reports a net profit of \$1,000 from an acre, but this is exceptional.

Plums

Varieties of plums which are not high enough in sugar content to dry well and are good shippers, are known as plums—a sharp distinction from prunes. They are in great demand for canning and preserving but the high prices obtained in eastern markets for fresh fruit this year, considerably shortened the tonnage handled locally for these purposes. Many acres are coming into bearing within the next three years and growing demand will probably be met by their production. The foothill counties of the Sierra Nevada and the extreme southern end of the San Joaquin Valley are especially adapted.

Prunes

Santa Clara Valley has been called the heart of the prune industry of the world. This area embraces land in Santa Clara, Alameda and San Benito Counties and produced nearly 55 per cent of the state's immense yield, while her bearing acreage represents more than half that of the entire state. Sonoma County is noted for the size and sugar content of her product. Prices received for dried prunes are based on the number to the pound. The average yield for the state is about 10 tons per acre green fruit, which dries away at $2\frac{1}{2}$ to 1. Production per acre is lower but sugar content higher where no irrigation is employed. Prior to 1915 the 10-year average basic price of prunes was four cents. Compare this with the average price for the season of 1919, 12 cents! It must also be taken into consideration that the acreage of bearing fruit has almost trebled since 1915, with constant planting.

The Prune and Apricot Growers' Association handles approximately 60 per cent of the crop, which proportion will increase as the value of co-operation and benefit by association advertising is more fully realized and appreciated by the grower. "Sunsweet" is the trade name for the association prune.

The export demand for dried fruit has been particularly heavy the past two years.

Walnuts

California leads the world in the production of walnuts, with France, before the war, a close second. Southern California has the largest and oldest walnut orchards and it is only within the past six years since experiment has undoubtedly proven certain sections in the north and central portions of the state favorable to production, that plantings have become important in those localities. A walnut grove of mature trees in southern California is a most beautiful sight to the lover of agriculture.

The California Walnut Growers' Association markets 75 per cent of the crop

which this year doubled that of 1916 and was three times that of 1914. Their advertising campaign has resulted in strong demand by eastern markets both for shelled and unshelled nuts. The former are put out by the Association canned, which is a new departure, insuring quality to the consumer. Two-thirds of the crop is grown in Ventura, Los Angeles and Orange Counties. Gauged by planting, it is the prediction that 1925 will have a normal crop of 50,000 pounds.

Mr. C. Thorpe, Manager of the California Walnut Growers' Association, writes, "While it is impossible to give accurate figures on the 1919 production at this writing, a very close approximation of yield for the state is 52,000,000 pounds, with f. o. b. value \$15,000,000. Percentage shipped out of the state about 97 per cent. Average price per pound to the grower about 28 cents. Acreage from which crop will be grown next year (1920) about 65,000 acres."

Berries

Increased planting of strawberries resulted in Placer County leading the state in acreage, 2,000; Sacramento 1,500; Los Angeles 1,000. Placer also led for acreage in other berries including Lawton, logan and raspberries 2,800; Sonoma 960; Santa Clara 450; Alameda and San Joaquin each with 250.

Description	Estimated Production, 1919—Crates		Average Price per Lb. to Grower
	Fresh	Canned	
Strawberries.....	82,434	45,008	10 to 15c
Loganberries.....	41,193	3,522	9c
Blackberries.....	66,939	8,244	8 to 11c
Raspberries.....	17,005	968	12 to 17c

Grapes and Wine

The drum Emperor and Malaga grape pack, in sawdust, command top prices in eastern markets. The Lodi section in San Joaquin County, this year shipped over 37 per cent of the table grapes, 7,096 cars out of a total of 19,000, which averaged the growers \$1,679 per car. A car of Tokay grapes brought \$1,073 in Boston, while fancy stock clung to \$3,200 per car in eastern markets for many weeks. Imperial and Coachella Valleys got off 249 carloads early in June which brought big returns. Average entire state to grower \$52.50 per ton.

Extensive experiments were made this season to ascertain the most remunerative and practical method of utilizing the immense tonnage of grapes which annually went to California's wine press. In 1918 we produced 7,361,164 gallons of sweet wine and 25,000,000 of dry wine, valued at \$30,000,000. Prohibitive revenue tax and impending prohibition reduced the production for the 1919 season. The quality of California wines excelled only by the rarer vintages of France formerly found market in every country of the world.

The California Grape Grower says, "Shipments of California wine in 1918, far surpassed the totals of any year in the history of the wine industry. We exported to 34 countries 2,472,847 gallons of wine valued at \$1,419,877 and by rail to other states, 38,464,738 gallons and 105,000 cases of wine valued at \$23,897,843." Japan in 1918 was our best customer and during the first nine months of 1919, bought over a million gallons of California wine, valued at nearly \$700,000. During the first six months of 1919, 2,710,079 gallons valued at \$2,152,506 were exported by sea from the San Francisco District.

In addition 6,000 carloads of wine grapes were shipped out of the state which brought the growers \$2,700,000. Grapes loaded at shipping points within the state returned growers \$10,039,250 and does not include an immense tonnage hauled to local wineries.

Raisins

Value of raisin production in Fresno County, the center of the industry in the west, will probably be between \$40,000,000 and \$45,000,000 for the 1919 crop.

Last year the net valuation of the crop was \$17,500,000 and the 1919 crop brings a 128 per cent increase in value with a five per cent increase in acreage, largely Thompson Seedless. Perhaps no co-operative marketing organization in the state, has realized success against such odds and so educated the public for raisins that no more is a carry-over from the preceding season the rule, as the California Associated Raisin Company. Mr. C. A. Murdock, Secretary of this organization, reports the raisin production as follows:

County Producing	1919 RAISIN PRODUCTION — TONS — VARIETY				
	Muscat	Thompson Seedless	Sultanas	Malagas, Black, Febersagos *	Total
Fresno.....	75,245	52,965	7,445	5,685	141,340
Tulare.....	8,300	11,475	3,690	1,420	24,885
Kings.....	10,160	620	685	95	11,550
Sutter.....	70	3,530	10	.....	3,610
Madera.....	920	265	30	235	1,450
Yolo.....	.....	1,410	.....	.....	1,410
Kern.....	690	350	.....	.....	1,040
San Bernardino.....	290	.....	595	.....	885
Merced.....	10	620	15	140	785
San Diego.....	325	.....	.....	.....	325
Stanislaus.....	.....	265	30	.....	295
Total.....	96,000	71,500	12,500	7,575	187,575

* Greater percentage of these varieties would have been used as wine grapes in normal times.

The 1918 production was 167,000 tons.

LIVESTOCK

No state is better adapted to the production of every variety of livestock than California. Our Valley lands with high hay and grain tonnage and stubble fields for late winter pasture, national forests for spring and summer range, foothill sections where the large herds of beef stock and sheep are pastured during winter months, and above all, the increasing alfalfa acreage—all tend to make our state premier in the diversity and adaptability of every line of livestock production.

Subdivision and irrigation of vast grain ranches with resultant increased cost of land, demand for prime beef and higher quality dairy products, the silo and pure bred associations have within the last decade influenced and stimulated production of more and better livestock. Compared with the intensive methods of the middle west, many sections here are still primitive in methods. This is especially true in mountain districts and isolated ranges. There are still cattlemen who regard the pure-bred with scornful amusement and the "one man law" as the safest and best means of curbing the cattle rustlers, but they are few and their day is fast passing.

Beef Cattle

In the intensive agricultural sections of the great valleys, smaller herds of pure breeds are becoming the rule. The Imperial Valley is unique in its immense livestock production, both cattle and hogs. In 1919, 72,563 head of beef and dairy cattle were assessable. The bulk of the beef cattle in the Imperial Valley are feeders brought in from the southwest and other sections of California where finishing feed is short, to be primed on cotton hulls and cake. In Ventura, Orange and Los Angeles Counties the finishing yards are located near the sugar factories and the beet pulp utilized.

There is no beef in the world comparing in flavor with the grass finished product of our ranges, although not so tender or as high in dressing percentage, as the so-called stall fed meat. Mountain herds are ranged in the National Forests spring and summer and driven to the lower valleys for the winter months. Steers are usually hay fed a few months prior to marketing. Cows and young stock range except in the few sections where snowfall is great enough to freeze the ground for a lengthy period.

According to Secretary David J. Stollery of the California Cattlemen's Association, the value of beef cattle in 1919 is about \$150,000,000 for the 1,700,000 odd head.

The State Board of Equalization gives the counties leading in assessed value and number of cattle as follows: Merced 88,062 head valued at \$1,991,570; Tulare 75,130 head \$1,878,540; Stanislaus 73,492 head \$1,715,535; Imperial 72,563 head \$2,902,520; Kern 62,676 head \$1,541,385. It will be noted Imperial County ranks highest in value due probably to the fact that little stock is actually raised and majority of the animals are marketable age when brought in for finishing.

Mr. F. P. Allen, of the U. S. Bureau of Markets, reports the following turnover of livestock in southern California only, for the fiscal year ending June 30, 1919:

Animal	Number Slaughtered	Estimated Average Price per Head	Estimated Value	
			Slaughtered	Shipped East
Cattle.....	150,569	\$100.00	\$15,056,900	
Feeders.....				\$8,078,434
Calves.....	33,981	12.00	417,772	
Hogs.....	182,116	35.00	6,374,060	3,500,000
Sheep and Lambs.....	277,874	10.00	2,778,740	
Dairy Cattle.....				3,000,000
		Total.....	\$24,627,472	\$39,205,906

It must be borne in mind this is but the valuation of animals slaughtered and shipped from southern California and does not include a probable equivalent from central and northern points.

During the past two years, considerable pure-bred stock has been purchased at middle western sales for our ranches, while shipments of breeding stock are becoming common export trade to the Hawaiian Islands, Philippines, Mexico and the Canal Zone. Shorthorn and Hereford predominate; Polled Hereford and Polled Angus with tendency to favor the milking Shorthorn or Durham in the foothill country, are the principal breeds.

Dairy Cattle

The dairy industry and hog raising go hand in hand and but few dairy ranches are without their porkers.

The U. S. Bureau of Crop Estimates states at the beginning of 1920, there were 571,000 milch cows in California with a value of \$97 per head. This is an increase of 40.6 per cent in price and 3,000 in number over five years ago, although there were more milch cows recorded for 1917 and 1918 than at the present time. This indicates "quality not quantity" is getting recognition.

The State Department of Agriculture reports the valuation of dairy products for the past two years.

	Pounds	1918	Pounds	1919
Butter.....	60,348,595	\$27,199,112	62,449,004	\$34,747,983
Cheese.....	9,795,974	2,290,298	11,600,138	3,335,040
Condensed and evaporated milk.....	50,443,374	5,616,646	74,901,238	10,111,667
Powdered milk.....	2,927,782	502,823		
Casein.....	3,249,953	487,493	2,963,766	400,108
Milk Sugar, crude and refined.....	816,231	331,684	1,907,174	686,583
Market milk, cream and ice cream.....		15,500,000		22,484,000
Calves produced on dairies.....		1,500,000		1,500,000
Skim milk and buttermilk.....		1,000,000		1,250,000
Total.....		\$54,428,056		\$74,515,381

Through the courtesy of Collector of Customs J. O. Davis, of the San Francisco District, our agent was allowed access to expert records and obtained the following:

Butter and Cheese Exports

1918				
	Butter Pounds	Value	Cheese Pounds	Value
From San Francisco District.....	193,982	\$109,557	755,430	\$248,798
From Los Angeles District.....	8,209	4,415	25,438	7,945
Total.....	202,191	\$113,972	780,868	\$256,743

In addition there were shipped from the San Francisco district 7,326,136 pounds of evaporated and canned milk, valued at \$1,045,825; from the Los Angeles District 147,878 pounds, valued at \$18,733, total 7,474,014 pounds, valued at \$1,064,558.00. From San Francisco District 2,664 pounds of other milk; from Los Angeles District 10,488 pounds of other milk.

FROM SAN FRANCISCO DISTRICT ONLY—ALL GRADES

1919				
Month	Pounds	Butter Valuation	Pounds	Cheese Valuation
January.....	10,312	\$ 6,727	28,375	\$ 11,889
February.....	4,476	2,292	10,123	3,678
March.....	43,352	26,239	62,918	21,948
April.....	67,992	44,617	63,039	28,244
May.....	62,047	37,354	52,547	19,098
June.....	102,860	69,559	54,102	19,439
July.....	52,141	34,433	14,443	5,257
August.....	83,087	55,046	42,033	15,574
September.....	75,749	53,798	32,783	12,972
October.....	15,799	11,540	46,522	18,756
November.....	115,359	72,679	78,588	32,637
December.....	64,912	51,038	62,327	26,140
Total.....	697,916	\$465,322	547,800	\$215,632

There was also shipped from San Francisco to foreign ports 8,078,926 pounds of canned and evaporated milk, valued at \$1,159,161; other milk 15,119 pounds.

The average price for choice butter in 1918 on the San Francisco market was 52.29 cents; 1919 62.25 cents. For fancy cheese in 1919 32.11 cents per pound. There is a difference of about one cent per pound between the San Francisco and Los Angeles market, for both these commodities.

Increasing amount of cream churned in local creameries accounts partly for the decrease in butter shipments received at San Francisco during 1919. Formerly the metropolis received often one-third of the state production of butter, some 800,000 pounds weekly. Recently more cream has been shipped from the country to the city's butter manufacturers.

The following compilations are by courtesy of the State Department of Agriculture:



PURE-BRED HEREFORDS

San Francisco Market

MONTHLY RECEIPTS AND AVERAGE PRICE, TWO YEARS ENDING
SEPTEMBER 30, 1919

Month	BUTTER				CHEESE			
	1918 Pounds	1919 Pounds	All Grades Average Price per Lb.		1918 Pounds	1919 Pounds	All Grades Average Price per Lb.	
			1918 Cents	1919 Cents			1918 Cents	1919 Cents
October.....	1,728,700	1,215,400	45.19	59.75	870,300	684,300	22.32	27.35
November.....	2,001,300	1,258,400	42.04	57.05	966,700	615,400	22.94	29.10
December.....	1,556,700	1,201,400	46.46	62.22	596,600	647,400	23.00	29.10
January.....	2,278,300	1,282,700	48.38	55.16	732,500	773,400	22.95	27.90
February.....	1,850,400	1,486,200	47.25	49.14	692,000	567,400	22.95	25.56
March.....	2,563,500	1,863,500	44.46	55.42	768,800	842,500	23.13	28.19
April.....	3,128,600	2,661,900	36.90	53.22	792,200	1,033,200	23.81	27.81
May.....	2,770,500	2,624,800	38.74	55.95	891,400	1,137,100	19.98	28.30
June.....	2,169,800	1,823,300	42.40	52.88	829,200	1,233,700	21.78	26.95
July.....	1,762,300	1,614,300	46.85	53.47	1,138,400	1,609,600	23.61	29.68
August.....	1,531,300	1,550,600	48.15	53.88	1,084,000	1,177,000	26.58	32.24
September.....	1,178,100	966,900	54.05	59.82	805,900	822,500	27.56	32.83
Total.....	24,529,500	19,549,400	52.29	60.25	10,168,000	11,143,500	.....	.....

State Production Past Ten Years, Condensed Milk, Butter and
Cheese, with Average Price on San Francisco Market

Year	Butter Pounds	Cheese Pounds	Condensed Milk Cases	All Grades Average Price S. F. Market	
				Butter per Lb. Cents	Cheese per Lb. Cents
1910.....	45,989,140	4,648,348	172,916	31.30	15.60
1911.....	50,380,736	4,640,491	116,384	28.00	14.50
1912.....	54,940,886	4,785,617	172,309	30.77	15.46
1913.....	55,542,709	5,600,972	172,800	32.12	16.06
1914.....	59,286,460	6,016,815	274,096	27.61	15.79
1915.....	67,549,400	6,249,775	345,402	28.70	14.10
1916.....	70,030,174	7,745,124	379,212	27.39	15.54
1917.....	68,373,021	9,236,663	506,095	37.07	19.78
1918.....	60,358,595	9,795,974	1,050,903	45.07	23.38
1919.....	62,449,004	11,600,135	1,145,859	55.66	28.75

The expansion of the evaporated and condensed milk industry has been very marked during the past two years, to meet orders from foreign and eastern markets. All production of milk sugar and casein goes to the east.

The ten counties leading in butter and cheese production in 1919, with comparative rank and production in 1918, are as follows:

BUTTER				CHEESE			
County	Rank in State	Production 1918 Pounds	1919 Pounds	County	Rank in State	Production 1918	1919
Stanislaus.....	(1st)	8,023,788	7,846,382	Stanislaus.....	(1st)	1,176,396	1,805,528
Humboldt.....	(2nd)	5,717,406	5,906,635	Humboldt.....	(4th)	898,880	1,670,675
Imperial.....	(3rd)	5,154,808	5,196,648	Santa Clara.....	(2nd)	1,314,905	1,271,340
Kings.....	(6th)	4,586,918	4,729,244	Marin.....	(8th)	352,776	701,146
Tulare.....	(4th)	5,100,155	4,727,314	Monterey.....	(3rd)	1,165,480	653,219
Marin.....	(9th)	2,800,321	3,658,580	Sonoma.....	(5th)	640,022	476,758
Sonoma.....	(10th)	2,780,826	3,631,596	Fresno.....	(6th)	390,008	451,163
Merced.....	(7th)	4,064,433	3,463,603	Imperial.....	(9th)	243,200	421,359
Fresno.....	(8th)	3,424,264	3,225,042	Napa.....	(15th)	165,534	349,846
San Luis Obispo.....	(11th)	1,712,394	2,020,940	Santa Cruz.....	(11th)	222,439	349,451

Goat Milk

The only goat milk condensory in the world is located at Pescadero, San Mateo County, 45 miles south of San Francisco. Here the Widemann Goat Milk Laboratories maintain a herd of 6,000 milch goats.

The milch goat is seemingly immune from tuberculosis and the demand for canned milk from physicians for use of tubercular patients and infants, far exceeds the supply.

Interest in this branch of dairying is increasing, indicated by growing demand for breeding stock and importation of outstanding animals. During the past two years the number of milch goats owned in the state have increased about 50 per cent, many of them purchased for family use. About half of the 12,000 milch goats in California are in the south.

The Howland herd, Rancho El Chivar, near Redlands is famous for its importation of proven breeding stock and a pioneer in the industry. The Penobscot Farm at Cool, El Dorado County, recently stocked a 3,000 acre ranch with milch goats, production to be used exclusively in the manufacture of goat milk cheese.

Hogs

Two distinct methods of hog raising are practiced. The pen fed and firm fleshed pork raised in dairying, alfalfa, grain and milo maize sections and the acorn fed range hogs, contrast sharply both in quality of pork and price received. The latter method is slowly disappearing with increased cultivated areas of our cattle ranches and modern methods. Growing appreciation of the pure bred and efficient management in handling, housing and feeding hogs are more general than five years ago. This is reflected in an increased demand from middle western markets.

The U. S. Bureau of Crop Estimate reports a decrease of three per cent from 1,003,000 head valued at \$18,054,000 the first of 1919, to 973,000 head valued at \$18 each or \$17,514,000 January, 1920. For the first time in 25 years, enough pork was raised in 1919 to meet local demand. This was nearly three and one-half per cent increase over the production of 1918. Considerable drop in market price the last of this year, will probably result in not more than 50 per cent of normal breeding for spring farrowing in 1920.

In numbers owned and assessed valuation, Imperial County leads with 29,127 head, value \$233,016; Tulare 20,500 head, \$70,250; Contra Costa 15,520, \$93,120; Stanislaus 13,125, \$335,475.25 with a pork production of 1,306,860 pounds; Kern County produced 983,412 pounds of pork. The assessed value is extremely low, as the average price received for porkers is \$35 per head according to the U. S. Bureau of Markets, which would give Imperial County alone \$1,019,445 value of her marketable hogs—other counties in proportion.

Horses and Mules

From thoroughbreds and draft horse to the pinto pony of the cattle range. California has been famed for its horses since the days of the Hidalgos. The quality and staying powers of our product is proven by the decided preference given purchase of California bred horses and mules by the Army, during the recent mobilization.

Gaited saddlers, trotting and running stock are still raised in many sections of the state. The vast breeding farms of a decade ago have sent many breakers of world records to the track, upholding California's reputation as the home of fine horses. The Santa Clara, Sonoma and San Joaquin Valleys and southern California are the leading sections of the output of blooded stock.

Value of horseflesh in California at the beginning of 1920, is about \$40,000,000 for the 400,000 odd head. The assessed number and value of leading counties in 1919 were: Alameda 20,000 head, valued at \$1,000,000; Los Angeles 16,269 head \$729,243; Contra Costa 15,240 head \$609,600. These counties are famed for their pure bred trotting, saddle and draft stock.

Imperial Valley is the mecca of the mule buyer and many of the beautifully matched 20-mule teams still used in long mountain and desert freight runs, are selected there. There are about 59,000 mules in California at the beginning of 1920, valued at \$7,198,000. Imperial in 1919, led in number of head owned within the county—4,845 valued at \$591,090. Los Angeles, Fresno and Tulare Counties follow in numerical importance in the order named.

Sheep and Goats

Many of the large flocks clipped in California are driven in from Oregon, Nevada and Arizona to graze on the mountain ranges or stubble fields after harvest. Of the 2,943,000 head of sheep credited to California in 1919, but 1,916,803 were owned within this state.

Wool production here has seen a steady decline since the banner year of 1879 when 46,903,360 pounds were produced. During the past four years the production has been about 11,600,000 pounds each for 1916 and 1917; 11,716,450 pounds for 1918 with 1919 yielding the heaviest clip since 1911—about 17,658,000 pounds not including "pulled wool." Over 70 per cent of this was spring clip. Fleece from northern flocks brings about 10 cents per pound higher than that from the south which runs high in shrinkage. In 1919 prices for spring clip ranged from 35 to 55 cents per pound for grease wool; fall clip 18 to 35 cents average all sections for state, spring clip 45 cents and fall clip 26½ cents per pound. Estimated value of spring clip for California \$5,562,270; fall clip \$1,403,811; total \$6,966,081. These figures are based on an estimated average six pounds per fleece, which is very conservative, for spring fleece often runs 7 to 7½ pounds each and the fall clip about 4½ pounds.

Assessor's figures for 1919 give Kern, Tehama, Imperial, Fresno and Glenn Counties leading for number of sheep in order named, although Tehama County leads in valuation of stock. For goats, Tehama, Napa, Mendocino, Sonoma and El Dorado Counties, with Napa highest in value of stock.

Poultry

President S. S. Knight of the Petaluma Poultry Keepers' Association, says: "In 1914 the world's production of eggs excluding China, was between 15 and 16 billion dozen, of which this country produced about 20 per cent. The poultry of the Central Powers and Russia was annihilated by the time the armistice was signed. At the beginning of 1920, poultry producing conditions in Europe were no better than they were a year ago. In this country in the spring of 1918, many sections were forced by the high price of animal foods, to sell great quantities of poultry. The sacrifice in some districts such as New England, was estimated at 30 to 50 per cent in spite of all assistance the Food Administration could render. California was extremely fortunate in this regard and probably suffered less than any section of America.

"Growth of the poultry industry in this state has been very rapid. In 1905, California produced probably less than 8,000,000 dozen eggs for market purposes. In 1911 this amount doubled and by 1917 had exceeded 32 million dozen eggs. Since that date production has shown but slight excelleration, totaling probably less than 10 per cent of normal. The production of broilers in 1919 from the Petaluma District was slightly under 116,000 dozen. The average price received by Petaluma poultrymen for eggs net, has increased from 27 cents per dozen for the 10-year period previous to 1917, to 49½ cents per dozen for the year 1919. The average investment per hen has advanced from about \$2.75 to \$5.50 during a similar period; annual profit per hen kept, from 65c to \$1.30.

"The Petaluma District produces approximately one-half of the eggs and poultry of California. The hatcheries of this section have a combined capacity of over one million eggs per setting and in 1919 enjoyed a business double that of the previous year. About 52 per cent of the eggs produced in the district are marketed by the Poultry Producers of Central California, all the stock of which co-operative organization is owned by poultry ranchers. The Los Angeles District has a similar marketing concern, known as the Poultry Producers of Southern California.

"California produces about six per cent of the eggs of this country. Of these about 5,000,000 dozen are exported, chiefly to Alaska, New Mexico and New York City. The fall and winter eggs shipped from the Petaluma District to New York City are of such superior excellence that they sell without price discrimination in competition with the highest grade of fancy eggs listed by the New York Mercantile Exchange."

Southern California has a large poultry industry distributed in the Los Angeles, Riverside, San Diego and San Luis Obispo sections. Tulare County in the San Joaquin Valley is coming into commercial importance and Santa Cruz, Butte County, Martinez, Livermore and Palo Alto are proven poultry raising centers.

During November and December of 1919, price to the consumer touched \$1.00 per dozen for eggs and at the beginning of 1920, carload lots brought that or above on the New York market—the highest price on record for California eggs. The average price to the poultryman for ten years prior to 1917 was 27 cents per dozen; in 1917, 35½ cents; 1918, 46½ cents; 1919, 49½ cents. For ten years prior to 1917, hens averaged about 8½ dozen eggs per annum. In 1917 and 1918, annual laying average per hen jumped to 10 dozen, while the estimated net profit per hen declined from \$1.36 in 1918 to \$1.31 in 1919.

The production in various commercial shipping centers for the state for the past two years has been as follows:

District	EGGS				POULTRY			
	1918		1919		1918		1919	
	Cases	Value	Cases	Value	Dozen	Value	Dozen	Value
Petaluma.....	534,855	\$8,022,825	534,912	\$8,023,680	57,320	.....	115,374	\$1,158,740
Santa Cruz.....	.....	.....	69,600	1,246,400	.....	.....	39,900	263,700
San Diego.....	.....	.....	50,000	700,000	.....	.....	.....	150,000
Runnymede, Palo Alto.....	.....	.....	10,000	150,000	.....	.....	5,000	60,000
*Los Angeles.....	550,000	7,000,000	560,000	8,000,000	70,000	\$750,000	100,000	955,000

* Figures furnished by Los Angeles Chamber of Commerce.

Valuation of poultry shipped is but approximate, as the basis of sale is by pound live weight. In 1918 old chickens brought about 30 cents, broilers 28 cents per pound on San Francisco market. In 1919 old chickens 30 cents, broilers 35 cents per pound.

San Francisco reports egg receipts for 1919, 617,083 cases, which was 48,283 cases less than in 1918. This does not, however, indicate less production from tributary sections but is explained by the extensive shipping direct to eastern markets from producing centers. Average San Francisco market quotation on highest grade eggs in 1919 was 60½ cents, a gain of 4.67 cents over the year previous. The egg business is estimated at \$9,000,000 for San Francisco.

The baby chick business has shown almost 100 per cent increase in all sections of California the past year and Santa Cruz reports 142,000 hatched during the season and Runnymede 150,000. This is a side line of poultry which holds promise of swiftly increasing importance.

Turkeys

The grain and rice stubble lands of the Sacramento and San Joaquin Valleys finish the large commercial shipments of turkeys for the holiday market. The flocks of white turkeys of the Imperial Valley are a spectacular sight against the green of the alfalfa or cotton fields after picking time. They command a premium in choice poultry markets upon their merits as dressed fowl. Between November 1 and December 31, 1919, more than 60,000 pounds were shipped out of the Imperial Valley.

Tulare shipped 18,000 young tom turkeys on one order for the War Department in October, 1919, destined for Thanksgiving dinner of troops in the Philippines and Island posts. Tehama County boasts large flocks and one order for 2,700 turkeys in December last, brought the owner \$14,720.25. The market during the latter part of 1919 averaged 40 to 50 cents per pound to the producer live weight—the highest price ever received in this state.

Rabbits

The public owing to high meat prices existant during the war, became educated in the desirability of hare and rabbit. The production since 1917 has about trebled. Associations sponsoring the various breeds are doing much to create markets and help raisers choose varieties adapted to local conditions and sections. Fur bearing rabbits are increasing in popularity, especially since the brisk demand for furs creates a market as coney for the choice skins and the felt manufacturies take those less prime. The San Francisco market for 1918 averaged about 25 cents per pound to the producer and in 1919, from 25 to 35 cents per pound, live weight.

Bees and Honey

The past two years have been poor in point of honey and beeswax production for California. About 113½ carloads of honey were shipped out of the state in 1919, and the total production ran about 5,600,000 pounds of honey and six or seven carloads of comb. Allowing an average price of 16 cents per pound for all grades of honey, the producers realized approximately \$896,000. During 1919, 3,687 cases were exported by boat from San Francisco, chiefly to China and Japan.

There are in the state about 120,000 colonies of bees, 80 per cent of which are signed by their 1,000 owners with the California Honey Producers' Co-operative Exchange. Organization has long been needed among the beekeepers, not only in the matter of purchasing supplies co-operatively but in cleaning out foul brood which prior to 1916 was devastitating colonies throughout the state. The industry is just beginning to assume normal proportions again. In 1917 exports of honey and beeswax to foreign countries including Japan, New Zealand, Russian Asia and the Philippine Islands, were 114,643 pounds of honey valued at \$21,464 for the first half of the year, 19,346 pounds of beeswax valued at \$8,191 for the entire year. From May 15, 1918, to January 1, 1919, there were 438,787 pounds of honey shipped by rail from California.

The citrus groves of Southern California produce the bulk of the Orange Blossom Honey, considered the finest market honey in the world, most of which is sold bottled. San Diego leads in the production of sage honey and the Imperial and San Joaquin Valleys send out the alfalfa honey, sold largely for baking purposes. Northern California and the Sacramento Valley produce two entirely different varieties, a light and dark honey. The latter is market d for baking and manufacturing purposes. The white honey from this section is considered by epicures to be fully equal to that of the sage and orange areas, but owing to the extensive advertising of the sage and citrus areas become so well known. This white valley honey forms a large percentage of that exported from San Francisco. It is believed only a question of a short time before this honey makes a reputation for itself on merit and quality.

Prices all varieties, have ranged the past year from 10 to 30 cents per pound, according to quality. Demand has been brisk, especially from the Oriental and Pacific Island trade.

Mr. C. G. Standeford of the Honey Producers' Co-operative Exchange, writes:

"The Exchange will market in 1919 about 40 carloads of alfalfa honey, of which about 20 carloads will come from the Imperial Valley and 20 to 25 carloads from the San Joaquin Valley whose normal shipment is 80 carloads from the southern end of the valley alone. About 35 carloads of orange blossom will be made up from approximately five carloads from the San Joaquin Valley, seven or eight from Los Angeles County and the balance from the orange growing areas of Riverside and San Bernardino Counties. San Diego County is the great sage producing section and from Sacramento Valley will come about 15 carloads. There will also be about five carloads of miscellaneous varieties such as clover, honeydew, etc."

MINERALS

The State Mining Bureau furnishes the following estimates of production and valuation for the various minerals produced in California in 1918:

Substance	1918		Compared with 1917 Increase + Decrease - Value	1919 (Estimated)	
	Amount	Value		Amount	Value
Antimony ore.....			\$ 18,786 -		
Asbestos.....	229 tons	\$ 9,903	322 -		
Barytes.....	100 tons	1,600	24,133 -		
Bituminous rock.....	2,561 tons	9,067	9,513 -		
Borax.....	88,772 tons	1,867,908	694,050 -		
Brick and tile.....		2,363,481	169,240 -		
Cadmium.....			+		
Cement.....	4,772,921 bbls.	7,069,909	425,627 +		
Chromite.....	73,955 tons	3,649,497	2,519,199 +		
Clay (pottery).....	112,423 tons	166,788	12,186 +	1,500 tons	39,000
Coal.....	6,343 tons	16,149	8,458 +		
Copper.....	47,793,046 lbs.	11,805,883	1,444,065 +	22,300,000 lbs.	4,237,000
Dolomite.....	24,560 tons	79,441	13,025 +		
Feldspar.....	4,132 tons	22,061	24,350 +		
Fluorspar.....			+		
Fuller's earth.....	37 tons	333	1,847 -		
Gems.....		650	2,399 -		
Gold.....		16,529,162	3,555,342 -	840,758 oz.	17,320,000
Granite.....		139,861	82,136 -		
Graphite.....			-		
Gypsum.....	19,695 tons	37,176	19,664 -		
Infusorial and diatomaceous earths.....	35,963 tons	189,459	61,949 +		
Iron ore.....	3,108 tons	15,947	4,451 +		
Lead.....	13,464,869 lbs.	956,096	906,010 -	4,450,000 lbs.	254,000
Lime.....	436,843 bbls.	461,315	149,935 +		
Limestone.....	208,566 tons	456,258	99,862 +		
Lithia.....	4,111 tons	73, 998	65,198 +		
Magnesite.....	83,974 tons	803,492	1,172,735 -	60,000 tons	490,000
Magnesium salts.....	1,008 tons	29,955	5,018 -		
Manganese ore.....	26,075 tons	979,235	582,576 +	11,000 tons	220,000
Marble.....	417,428 cu. ft.	49,898	13,052 -		
Mineral paint.....	728 tons	4,738	2,038 +		
Mineral water.....	1,808,791 gals.	175,650	34,984 +		
Molybdenum.....			-		
Natural gas.....	46,373,052 M cu. ft.	3,289,524	324,602 +	47,000,000 M cu. ft.	3,500,000
Petroleum.....	99,731,177 bbls.	127,459,221	40,483,012 +	100,000,000 bbls.	133,000,000
Platinum.....	571 ounces	42,788	931 -	500 ounces	60,000
Potash.....	49,381 tons	6,808,976	2,606,087 +	See *	
Pumice and volcanic ash.....	2,114 tons	28,669	23,374 +		
Pyrite.....	128,329 tons	425,012	101,308 +		
Quicksilver.....	22,621 flasks	2,579,472	183,006 +	15,000 flasks	1,300,000
Salt.....	212,076 tons	806,328	221,955 +	See *	
Sandstone.....	900 cu. ft.	400	6,674 -		
Serpentine.....			-		
Silica (sand and quartz).....	23,257 tons	88,930	47,764 +		
Silver.....		1,427,861	35,094 -	1,121,000 ounces	1,244,000
Soapstone and talc.....	11,760 tons	85,534	40,255 +		
Soda.....	20,447 tons	855,423	73,155 -	See *	
Stone, miscellaneous *.....		3,404,157	230,610 -		
Strontium.....	2,900 tons	33,000	4,000 -		
Tungsten concentrates.....	1,982 tons	2,832,222	246,791 -	100 tons	60,000
Zinc.....	5,565,561 lbs.	506,466	702,724 -	970,000 lbs.	69,000
Unapportioned.....		15,134	14,335 -		
Totals.....		\$199,753,837			\$182,463,000
Net Increase.....			\$38,550,875 +		

* Unapportioned—includes cadmium, fluorspar, graphite, molybdenum and serpentine.

* Includes macadam, ballast, rubble, riprap, paving blocks, sand, gravel and grinding mill pebbles.

* Unapportioned—includes cadmium, fluorspar, graphite and molybdenum.

* Includes onyx and serpentine.

* Combined with marble.

* Salines including borax, potash, salt and soda.

California led the Union in 1919 gold production. Mining has just begun to adjust itself to pre-war conditions and much activity is evidenced by the opening of many mines, purchase of equipment and machinery. The price of silver as we go to press is stimulating much development and opening properties long idle.

PETROLEUM

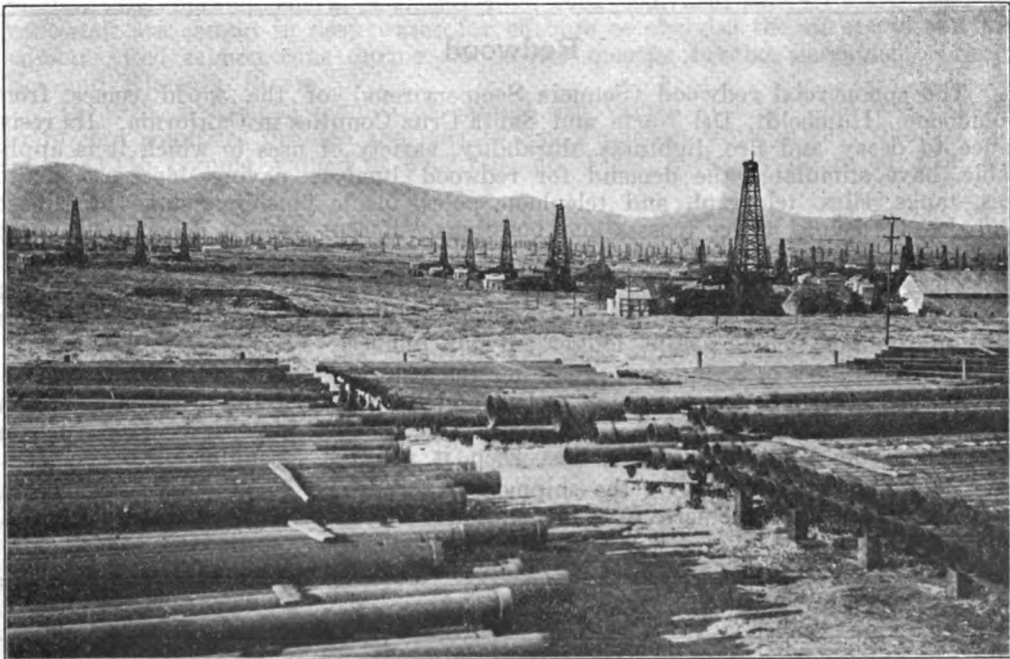
Petroleum output shows an increase from \$127,459,221 in 1918, to approximately \$133,000,000 in 1919. Production will no keep pace with the demand. The yield in 1919 increased but slightly in total number of barrels but the price averaged somewhat higher than in 1915. There are approximately 9,000 producing wells. Amount of oil in storage decreased from 32,042,923 barrels in January, 1919, to 30,300,000 by the end of the year.

California produces approximately 30 per cent of the entire crude oil output of the United States, alternating with Oklahoma in leadership.

SUMMARY OF FIELD OPERATIONS. PRODUCTION IN CALIFORNIA FOR YEAR 1919. (Standard Oil Bulletin, January, 1920.)

FIELD	Wells			Production	
	Rigs Completed during Year	Completed during Year	Abandoned during Year	For Year Barrels	Per Day Barrels
Coalinga.....	81	98	28	16,385,610	44,892
Kern River.....	99	77	1	7,563,025	20,721
Lompoc and Santa Maria.....	37	35	4	6,031,910	16,533
Los Angeles and Salt Lake.....	2	1	.....	1,341,415	3,675
Lost Hills—Belridge.....	51	33	5	4,554,821	12,479
McKittrick.....	7	8	4	2,810,848	7,701
Midway—Sunset.....	156	166	26	32,003,952	87,682
Summerland.....	.....	.....	.....	53,680	147
Venture County and Newhall.....	45	36	5	1,792,465	4,911
Watsonville.....	.....	.....	.....	27,375	75
Whittier-Fulerton.....	186	105	5	28,657,683	78,514
Total.....	664	550	78	101,221,784	277,320

Total crude oil stocks December 31, 1918.....	32,042,923 bbls.
Total crude oil stocks December 31, 1919.....	30,480,323 "
Decrease during year.....	1,562,600 "
Daily decrease during year.....	4,281 "



PART OF COALINGA OIL FIELD, FRESNO COUNTY
(COURTESY OF STATE MINING BUREAU)

LUMBER

According to Wilson Compton, Secretary-Manager of the National Lumber Manufacturers' Association, the price of lumber to-day is, roughly speaking, twice as high as before the war. When the armistice was signed all softwoods were 75 per cent and Douglas fir 93 per cent higher than the year prior to the U. S. entering the war. Other building materials showed a greater ratio of increase over a similar period.

Over 40 per cent of the standing timber remaining in the United States is credited to the Pacific Northwest and California, some 1,130,000,000,000 feet valued at \$1,500,000,000. Of this California has over 30 per cent and is the home of the redwood, noted for its resistance to decay and variety of uses. The western yellow, white and sugar pine are found through the Sierra Nevada mountain regions. It is conservatively estimated that the investment in equipment and mills touches a round \$50,000,000. Lumbering in California varies from the use of two-man portable outfits to established lumber communities like McCloud, Eureka and Weed, where the output of a mill will run 200,000,000 board feet measure annually. Add to this the millions paid for wages and supplies and you have another of California's chief sources of wealth.

In 1918 the lumber production of the Pacific Coast was 8,590,000,000 board feet, of which California produced 1,277,000,000 from 250 sawmills.

From 153 mills reporting the cut for 1918 was distributed as follows:

Board Feet		Board Feet	
Redwood.....	443,231,000	Hemlock.....	4,061,000
Western yellow pine.....	357,351,000	Cottonwood.....	1,500,000
Douglas fir.....	219,267,000	Laurel.....	300,000
Sugar pine.....	108,423,000	Oak.....	95,000
White fir.....	104,778,000	Spanish cedar.....	28,000
Cedar.....	21,358,000	Mahogany.....	15,000
Spruce.....	16,663,000	Mario.....	9,000
		Alder.....	5,000

Redwood

The commercial redwood (*Sequoia Sempervirens*) of the world comes from Mendocino, Humboldt, Del Norte and Santa Cruz Counties in California. Its resistance to decay and fire, lightness, durability, variety of uses to which it is applicable, have stimulated the demand for redwood lumber, paving blocks, railroad ties, tanks, silos, telegraph and telephone poles, inside finishing, stave pipe, sash and doors, roofing, lattice trusses and buildings. Recent eastern demand has been filled by shipments through the Panama Canal.

The redwood (*Sequoia Sempervirens*) must not be confused with the "Big Trees" of California found in Sequoia and Yosemite National Parks—the *Sequoia Washingtoniana*—which are no longer cut for lumber.

Redwood burl is a lumpy growth on the exterior of the tree, usually covering an old scar. It takes a high polish and its gnarly grain presents a variety of beautiful natural markings. Its rarity and demand for objects d'art such as bowls, ash and pipe bowls, trays, etc., keep it at high premium in the market.

The following figures give the shipments of redwood for the past five years, from California mills exclusive of many million feet devoted to shakes, split ties, posts, etc.

B. M. Feet		B. M. Feet	
1915.....	354,131,000	1918 (estimated).....	490,000,000
1916.....	406,340,000	1919 (estimated).....	475,000,000
1917.....	487,458,000		

Tanbark

The bulk of production comes from the redwood belt and approximately 92,000 cords were peeled in 1918 and 1919, valued at \$3,220,000.

Pine

White, sugar and western yellow pine are cut as far south as Riverside County while the areas credited to California's cut often lap over into western Nevada and southern Oregon. In 1918, Siskiyou County led with 235,611,000 board feet cut; followed by Lassen with 130,128,000; Tuolumne, 74,306,000; Plumas 52,629,000 and 23 other counties cutting less than 40,000,000 board feet each. The California White & Sugar Pine Manufacturers' Association which administers 90 per cent of the pine lumber interests of California and numbers among its clientele the largest mills, reports a total cut for 1918 of 712,499,500 board feet. The apparent discrepancy between these figures and those of the U. S. Forest Service is due to the fact that but a small proportion of the mills having membership in the White & Sugar Pine Mfg. Association, reported to the District Foresters, who obtained their figures chiefly from mills operative within the boundaries of the National Forests.

The fruit industry calls for over 250,000,000 board feet of lumber yearly. The California Fruit Growers' Supply Company, California Fruit Exchange and Stewart Fruit Company have extensive timber holdings, mills and railroads from which to supply their members, while many smaller lumber camps cut exclusively for various fruit or vegetable unions.

FISH INDUSTRY

Exclusive of the immense amount of money invested in fish canneries, it is estimated the fresh fish fleet, equipment, nets, trawls, etc., represent an expenditure of over \$75,000,000 and gives employment to more than 12,000 people during the peak of the tuna, sardine or salmon runs. More than half the world's supply of canned salmon is caught on the Pacific Coast and California cans the bulk of this catch. Bass, halibut, shark, sole, baracuda, rock cod, kingfish, sardines, tuna and yellowtail are caught in deep water far offshore as are also the silverside and king salmon. Red salmon runs during the spring months in the Sacramento, Smith, Eel and Klamath Rivers.

In 1918, 18,278,622 pounds of canned fish valued at \$3,153,508 was exported to foreign countries through the port of San Francisco, while in 1919, 194,647 cases or 5,783,115 pounds, valued at \$968,119 and 1,000 packages of dried fish were shipped.

The Alaska Packers Association maintains a fishing fleet of 94 vessels which represent an annual upkeep of a quarter million dollars. Inasmuch as the association is largely financed by California capital, the salmon pack brought from their 14 Alaska canneries is credited to this state. Development of southeastern Alaska by the Alaska Packers Association, has been one of the consistent policies of the organization and during the influenza epidemic of 1919, their 6 medical stations administered treatment impartially for the native population as well as their own employees.

During 1918 the Alaska Packers Association liberated 6,135,000 red salmon fry in Alaskan streams; in 1919 this number was increased to 15,205,000 fry and 18,420,000 eggs.

The salmon pack for 1919 is one of the smallest in the history of the industry. The Alaska Packers Association reports their pack for 1919 as 571,170 cases and 539 barrels of salt salmon, against four times that amount in 1918. Some 67,386 cases of salmon caught in California rivers were packed during the past season. Twelve firms engage in salt drying salmon on Monterey Bay and the haul topped 12,000,000 pounds in 1919, far in excess of previous years.

Next in importance is the sardine canning industry. The F. E. Booth Company operates some of the largest canneries and has developed markets and demand for the California sardine throughout the world. The sardines begin to run in

June and sometime lasts until December when the canneries operate day and night to handle the catch. With about 45 sardine canneries operative, southern California turns out two-thirds of the pack. More than half our sardines were exported to foreign countries by boat from San Francisco or Los Angeles and by rail to markets outside the state. Of the 1918 pack, about 200,000 cases were sent out by rail and 60,000 cases by sea. Tuna and yellowtail are found only off the coast of southern California and the 1919 pack approximated a value of nearly \$10,000,000.

Packs of the most important varieties for past two years were as follows, according to report of State Fish and Game Commission:

Canned	Cases		By-Products		
	1918	1919			
Albacore.....	82,801	192,252	Fertiliser.....	1,521 tons	
Anchovy.....	2,199	216	Fish meal.....	7,213 tons	
Bonito and shipjack.....	78,351	59,183	Fish oil.....	346,724 gallons	
Salmon.....	34,436	30,521	Number of Plants.....	87	
Sardines.....	1,484,978	1,151,516	Number of employees.....	8,039	8,242
Tuna.....	278,328	465,372	Value of Plants.....	\$5,658,990	\$ 7,708,871
Tuna, striped.....	—42	84,758	Estimated value of pack.....	8,000,000	17,000,000
Yellowtail.....	71,831	28,395			
Total.....	2,032,966	2,012,213			
Total other varieties.....	153,167	59,426			
Grand total.....	2,186,133	2,071,639			

THE NATIONAL FORESTS IN CALIFORNIA

The National Forests owned by the federal government and administered for the public by the U. S. Forest service, occupy the greater part of both slopes of the Sierra Nevada Mountains in California, from the Oregon line to the Tehachapi; of the Siskiyou and Salmon Mountains south to Lake County and the coast range from Monterey south to the Mexican line. The preservation of these forests insure a perpetual supply of timber, preserve forest cover which regulates the flow of streams and provides for the use of all resources which they contain in ways to render the largest service.

About two-thirds of California's timber is privately owned and some 90 per cent of the annual cut is derived from these private holdings. The National Forests, however, contain some 120 billion feet of timber, largely pine, fir and cedar, worth at present prices \$250,000,000,000. Much is inaccessible but the timber sale business of the National Forests in California is nevertheless a thriving and growing one. During 1919, more than 240 million feet, valued at \$566,000, was sold to local lumbermen. Unlike most logging on private lands, cutting on the forests is carefully supervised. Young and immature trees are protected from damage by felling and fire, and adequate seed trees left to insure future supply.

Owners of range stock are depending each year, more largely on the National Forests for summer range. The ranges, once allotted to a permittee whose ranch property is situated and managed as contiguous to the National Forest range, may be acquired permanently. The majority of the ranges are good and the charge for grazing moderate, averaging 60 cents for cattle, 15 cents for sheep, 75 cents for horses per head for a six-month season. During 1919 more than 3,000 owners of some 220,000 cattle, horses or hogs, and 550 owners of more than 600,000 sheep and goats used National Forest range in California.

Camping, hunting and fishing in the National Forests is unexcelled and during the summer of 1919, over a million people visited them, 800,000 of whom camped. They pitched camp wherever fancy dictated and stayed as long as they wished. Firewood is of course, to be had for the gathering. Forage for saddle and pack stock is free, as is the use of the government built and owned telephone systems. No permits except south of the Tehachapi, are required to build camp fires. Care with fire, proper camp sanitation and reasonable use of camp improvements provided, is practically all that is asked of the visitor.

The Forest Service besides employing some 500 lookouts, patrolmen, firemen and rangers to guard the forests and extinguish such fires, carries on an educational campaign in an endeavor to prevent them. The State and Federal laws relating to fire are enforced to the limit. During the past season 268 careless or malicious cases were prosecuted. Only 11 resulted in acquittal. In addition, \$9,000 was collected in fines, damages and court costs.

The public is welcome to the playground of California—the National Forests, but care with fire is required of everyone. For the 1920 season the Forest Service plans renewed vigilance, added patrols, the use of airplanes to supplement the regular lookout service, and a strict and impartial enforcement of all fire laws. By these means and with the co-operation of the public, it hopes to reduce the annual loss by forest fires.

AREA AND LOCATION IN THE STATE OF THE NATIONAL FORESTS COMPILED BY THE BRANCH OF ENGINEERING, U. S. F. S.

June 30, 1919.

Forest	Areas within National Forest Boundaries			Location—County in California
	National Forest land Acres	Other lands Acres	Total Acres	
1 Angeles.....	817,441	241,091	1,058,532	Los Angeles, San Bernardino
2 California.....	807,408	255,214	1,062,622	Mendocino, Glenn, Colusa, Lake
3 Cleveland.....	547,851	265,765	813,616	Orange, Riverside, Imperial, San Diego
4 Crater*.....	47,097	9,925	57,022	Modoc (mostly in Oregon)
5 El Dorado*.....	549,060	286,740	835,800	El Dorado
6 Inyo*.....	1,191,209	58,073	1,249,282	Inyo
7 Klamath*.....	1,498,824	235,841	1,734,665	Siskiyou, Humboldt, Del Norte
8 Lassen.....	936,957	384,386	1,321,343	Shasta, Lassen
9 Modoc.....	1,186,273	396,586	1,582,859	Modoc, Lassen
10 Mono*.....	785,701	89,160	874,861	Alpine, Mono
11 Monterey.....	320,281	40,213	360,494	Monterey, San Benito
12 Plumas.....	1,144,418	288,442	1,432,860	Plumas, Butte, Lassen
13 Santa Barbara.....	1,689,251	239,043	1,928,294	San Luis Obispo, Santa Barbara, Ventura, Los Angeles
14 Sequoia.....	1,875,900	145,709	2,021,609	Fresno, Tulare, Kern
15 Shasta.....	809,014	777,866	1,586,880	Siskiyou, Shasta, Trinity
16 Sierra.....	1,488,655	173,905	1,662,560	Mariposa, Madera, Fresno
17 Siskiyou*.....	348,919	52,876	401,795	Siskiyou and Oregon
18 Stanislaus.....	810,802	293,610	1,104,412	Calaveras, Alpine, Tuolumne, Mariposa
19 Tahoe*.....	531,210	636,327	1,167,537	Sierra, Butte, Yuba, Nevada, Placer
20 Trinity.....	1,428,388	317,759	1,746,147	Trinity, Humboldt
Total.....	18,814,659	5,188,531	24,003,190	

* Forest in other state also; area in California only given.

RECREATION AND SPORT

We have 26,212 miles of fishing streams and 862,000 acres of lakes, and the possibility of enjoying them every day in the year. State and federal government maintain hatcheries and game preserves. Most of the former are situated in the awesomeness of the mighty pine-clad mountains, from which trout or salmon are planted in the headwaters of our streams.

Hatcheries

U. S. Fish Hatcheries	State Fish Hatcheries
1 Baird, Shasta County	1 Almanor, Plumas County
2 Battle Creek, Anderson, Shasta County	2 Bear Lake, San Bernardino County
3 Mill Creek, Tehama County	3 Brookdale, Santa Cruz County
	4 Domingo Springs, Plumas County
	5 Fort Seward, Humboldt County
	6 Mt. Shasta, Siskiyou County
	7 Mt. Whitney, Inyo County
	8 Snow Mountain, Mendocino Co.
	9 Tahoe, Placer County
	10 Tallac, El Dorado County
	11 Ukiah, Mendocino County
	12 Wawona, Mariposa County
	13 Fall Creek, Siskiyou County

About 25,000,000 trout and 10,000,000 salmon fry are distributed each year.

National Parks

Of the National Parks, Yosemite is naturally the most familiar to the tourist. This inspiring section is visited annually by more than 15,000 people and government concessions provide excellent hotels, camping grounds and tent communities for the summer visitor, while the winter sublimity is just commencing to become appreciated by the lover of outdoor sports and snow clad landscapes. The Yosemite National Park comprises 719,622 acres situated in Tuolumne, Madera and Mariposa Counties, reached by rail from Merced or auto stage from any of the Central California cities.

The Sequoia and General Grant National Parks are famed for their gigantic trees and cover 161,597 and 2,536 acres respectively in Fresno and Tulare Counties. Many Californians have availed themselves of the summer homestead privilege and erected cozy cabins in the heart of the big timber.

National Monuments

The Lassen Volcanic National Monument is the largest created in California and embraces some 79,561 acres in Shasta, Lassen, Plumas and Tehama Counties besides the only active volcano in the United States. Occasional eruptions and lava flow are of prophetic interest to scientists and tourists. There has been no activity since 1914-15, when the volcano was active for several months, until the beginning of 1920.

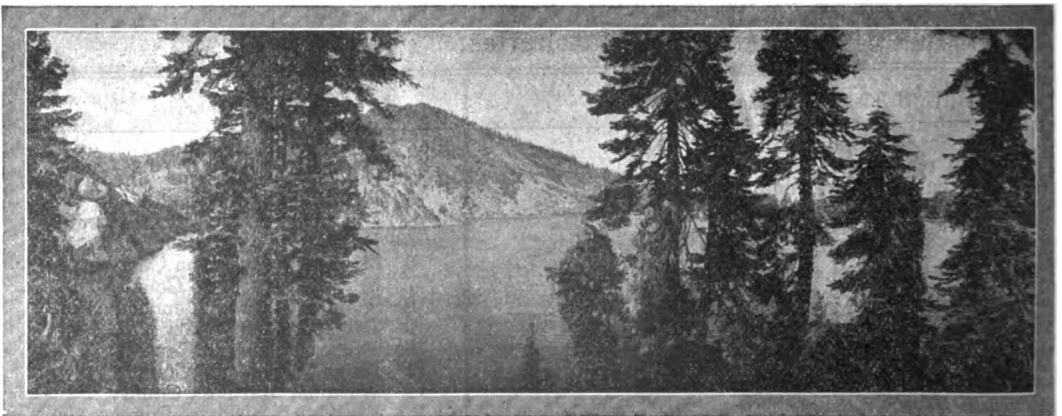
The Pinnacles in San Benito County and the Devil's Post Pile in Madera County embrace but a few thousand acres each and offer picturesque and unusual stone groupings.

The Muir Woods on the northern slope of Mt. Tamalpais covers less than 300 acres of venerable monarchs of the forest and is reached by thousands in an hour's trip from San Francisco.

The Cabrillo National Monument is one of the short trips from San Diego and marks the spot where the explorer landed on those shores.

State Parks

The California Redwood Park is located in the Santa Cruz Mountains, about 60 miles south of the metropolis and is reached by both railroad and auto stage lines, beside affording excellent camp sites for motorists and hikers over the Ridge Road. The park comprises some 7,000 acres of gigantic redwood trees, caves and glens.



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Stockton	25-26		

EDITOR'S NOTE—For courtesy and co-operation in assembling the foregoing, we are in addition to those directly quoted, indebted to:

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COUNTIES COVERED

BY

AGRICULTURAL SURVEYS MADE

BY THE

California Development Board

ONE of the most important activities of the California Development Board is that of gathering agricultural information on the State by counties. These surveys cover climatic and soil conditions, crop information, giving details as to methods and costs of production, etc., towns, transportation, irrigation facilities, social and business conditions.

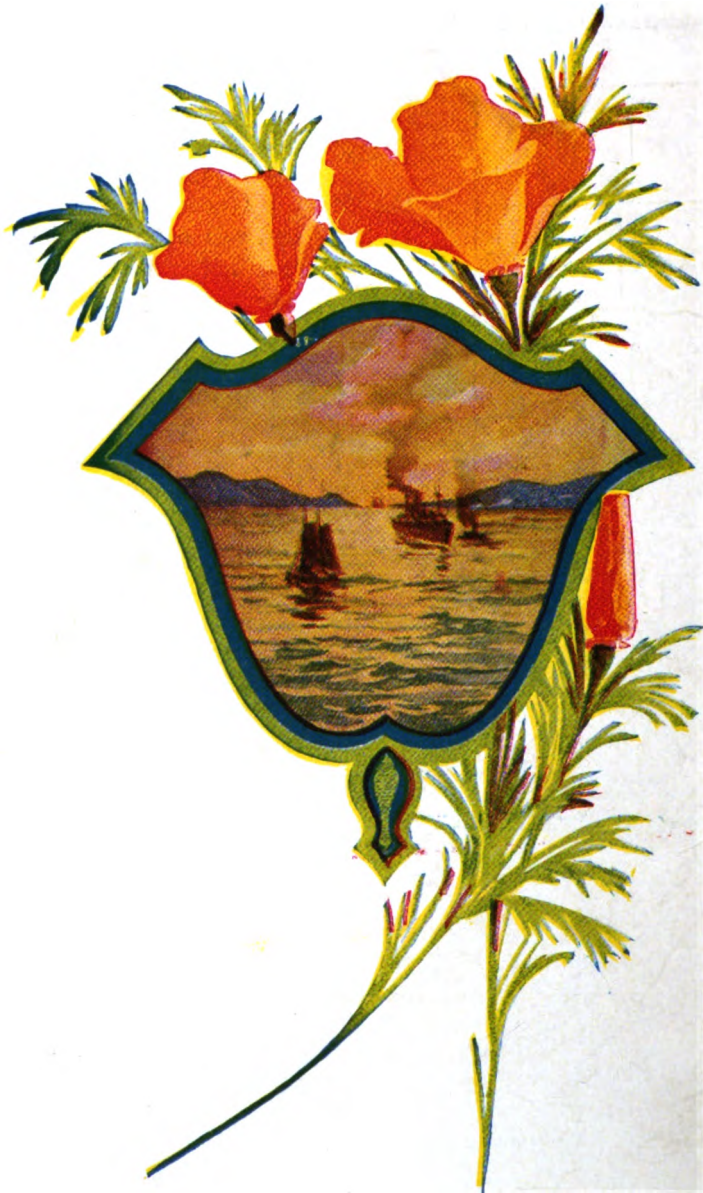
The object of this work is to complete a file of information of this State which would answer the questions of the prospective settler.

So far twenty-two of the counties have been covered and arrangements have been made to complete the whole State. There have also been two special surveys made covering the Palo Verde Valley and the Marin County Coast Section.

This information is on file in the rooms of the California Development Board and may be consulted at any time.



*Have been printed in book form.

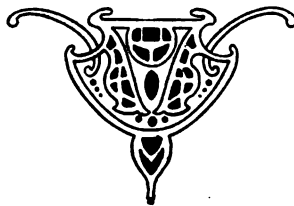


A. F. BROAD PRINTER
48 THIRD ST., SAN FRANCISCO

SUPPLEMENT
TO
1918-19 ANNUAL REPORT
OF THE
CALIFORNIA DEVELOPMENT
BOARD

COVERING THE YEAR
1 9 2 0

ISSUED APRIL 7, 1921



CALIFORNIA DEVELOPMENT BOARD
OFFICE AND EXHIBITION HALL
FERRY BUILDING
SAN FRANCISCO



POPULATION OF CALIFORNIA

In 1920 California jumped from twelfth to eighth place in population in the Union, showing a gain of 44.1% over 1910 population, or 2,377,549. Of her 3,426,536 people, 2,331,729 or 68% live in our cities, while but 1,095,132 populate our farms. Topographically the population is distributed as follows:

Bay counties (nine in number) population 1,184,000, an increase of 27% over 1910. San Joaquin Valley (eight counties) 425,000, increase 58%. Sacramento Valley (nine counties) 214,000, increase 23.7%. North coast counties (five) 73,000, increase 6%. Southern California 1,357,000, increase 81%. South coast counties (four) 85,000, increase 10%. Mountain and desert region (fifteen counties) 101,000, decrease 17 2/3%.

The State Board of Health estimate that about 32,502 immigrated to California during the fiscal year of 1920, eight hundred of whom settled in San Francisco. According to the preliminary announcement of the Fourteenth census, just completed, the population by counties and incorporated cities is as follows:

COUNTY	CITY	POPULATION		COUNTY	CITY	POPULATION	
		1920	1910			1920	1910
ALAMEDA	Alameda	344,127	246,131	KERN	Bakersfield	54,843	37,715
	Albany	28,806	23,383		Delano	18,638	12,737
	Berkeley	2,461	808		McKittrick	805	...
	Emeryville	55,886	40,434		Maricopa	207	...
	Hayward	2,890	2,613		Taft	1,121	...
	Livermore	3,487	2,746	KINGS	Tehachapi	3,317	...
	Oakland	1,916	2,030		Corcoran	458	385
	Piedmont	216,351	160,174		Hanford	22,031	16,230
	Pleasanton	4,282	1,719	LAKE	Lemoore	1,101	...
	San Leandro	991	1,254		Lakeport	5,888	4,829
ALPINE		1,355	1,000	LASSEN		5,402	5,526
	Amador	5,703	3,471		Susanville	1,024	870
AMADOR		243	309	LOS ANGELES		8,507	4,802
	Amador City	7,793	9,086		Alhambra	918	686
BUTTE	Jackson	377	...		Arcadia	936,438	504,131
	Plymouth	1,601	2,035		Avalon	9,096	5,031
SUTTER CREEK	Sutter Creek	657	...		Asus	2,239	696
		920	...		Beverly Hills	586	...
BIGGS		30,030	27,301		Burbank	2,460	1,477
	Chico	683	403		Claremont	674	...
CHICO		9,339	3,750		Compton	2,913	...
	Gridley	1,636	3,859		Covina	1,728	1,114
GRIDLEY		3,340	3,859		Culver	1,478	922
	Oroville	6,183	9,171		Eagle Rock	1,990	1,652
ANGELS CAMP		941	...		El Monte	503	...
		9,290	7,732		El Segundo	2,250	...
COLUSA		1,846	1,582		Glendale	1,283	...
	Colusa	53,889	31,674		Glendora	1,563	...
CONTRA COSTA	Antioch	1,936	1,124		Hermosa Beach	13,536	2,746
	Concord	912	703		Huntington Park	2,028	...
	El Cerrito	1,505	...		Inglewood	2,337	679
	Hercules	373	279		La Brea	4,513	1,290
	Martinez	3,858	2,115		Long Beach	3,286	1,536
	Pinole	967	798		Los Angeles	1,686	954
	Pittsburg	4,715	2,372		Long Beach	55,593	17,800
	Richmond	16,843	6,802		Manhattan Beach	576,673	319,198
	Walnut Creek	538	...		Monrovia	880	...
		2,759	2,417		Monterey Park	5,480	3,576
CRESCENT CITY		955	1,114		Pasadena	4,106	...
		6,426	7,492		Pomona	45,354	30,291
PLACERVILLE		1,650	1,914		Redondo Beach	13,505	10,207
		128,779	75,657		San Fernando	4,913	2,935
CLOVIS		1,157	...		San Gabriel	3,204	...
	Coalinga	2,934	4,109		San Marino	2,640	...
FOWLER		1,528	675		San Pedro and Harbor Dist.	584	...
	Fresno	45,086	24,892		(Included Los Ang. City)	23,096	...
KINGSBURG		1,316	634		Santa Monica	15,252	7,847
	Reedley	2,447	...		Sierra Madre	2,026	1,303
SANGER		3,158	1,750		South Pasadena	7,648	4,640
	Selma	11,863	7,172		Venice	10,335	3,119
GLINN	Orland	1,582	836	MADERA	Vernon	1,005	772
	Willows	2,100	1,139		Watts	4,539	1,922
HUMBOLDT	Arcata	37,418	33,867		Whittier	7,997	4,580
	Blue Lake	1,486	1,121		Madera	12,203	8,308
EUREKA		441	507			2,444	2,404
	Ferdale	12,923	11,845	MARIN	Belvedere	27,342	25,114
FORTUNA		919	906		Corte Madera	616	481
		488	883		Larkspur	607	...
IMPERIAL	Brawley	43,383	13,591		Mill Valley	612	594
	Calexico	5,392	881		Rose	2,554	2,551
CALIPATRIA		6,223	797		San Anselmo	737	556
	El Centro	785	...		San Rafael	2,475	1,531
HOLTVILLE		5,464	1,610		Sausalito	5,512	5,934
	Imperial	1,347	729			2,790	2,383
INTO		1,806	1,257				
	Bishop	7,031	6,974				
		1,304	1,190				

COUNTY	CITY	POPULATION		COUNTY	CITY	POPULATION	
		1920	1910			1920	1910
MARIPOSA		2,775	3,956	SAN MATEO		36,781	26,585
MENDOCINO	Hornitos	100	160		Burlingame	4,107	1,565
	Fort Bragg	2,616	2,408		Daly City	3,779	.....
	Point Arena	394	497		Hillsborough	931	.....
	Potter Valley	512	576		Redwood City	4,020	2,442
	Ukiah	2,305	2,136		San Bruno	1,562	.....
	Willits	1,468	1,183		San Mateo	5,979	4,384
MERCED		24,579	15,148		South San Francisco	4,411	1,989
	Gustine	716	.....	SANTA BARBARA		41,097	27,738
	Los Banos	1,376	745		Lompoc	1,876	1,482
	Merced	3,974	3,102		Santa Barbara	19,441	11,650
MODOC		5,425	6,191		Santa Maria	3,943	2,260
	Alturas	979	916	SANTA CLARA		100,588	83,539
MONO		960	2,042		Alviso	517	402
MONTEREY		27,980	24,146		Gilroy	2,862	2,437
	Carmel-by-the-Sea	638	.....		Los Gatos	2,317	2,232
	King City	1,048	.....		Mayfield	1,127	1,041
	Monterey	5,479	4,923		Morgan Hill	646	607
	Pacific Grove	2,974	2,384		Mountain View	1,888	1,161
	Salinas	4,308	3,736		Palo Alto	5,900	4,486
NAPA		20,678	10,800		Santa Clara	5,220	4,348
	Calistoga	850	751		San Jose	39,642	28,946
	Napa	6,757	5,791		Sunnyvale	1,675	.....
	St. Helena	1,346	1,603	SANTA CRUZ		26,269	26,140
NEVADA		10,850	14,955		Santa Cruz	10,917	11,146
	Grass Valley	4,006	4,520		Watsonville	5,013	4,446
	Nevada City	1,782	2,689	SHASTA		13,311	18,920
ORANGE		61,375	34,436		Coram	32	966
	Anaheim	5,526	2,628		Kennett	464	.....
	Brea	1,037	.....		Redding	2,912	3,572
	Fullerton	4,415	1,725	SHERMAN		1,783	4,098
	Huntington Beach	1,687	815		Loyalton	442	983
	Newport Beach	894	445	SISKIYOU		18,545	18,801
	Orange	4,884	2,920		Dorris	424	214
	Santa Ana	15,485	8,429		Dunsmuir	2,528	1,719
PLACER		18,584	18,237		Etna	425	518
	Auburn	2,289	2,376		Fort Jones	331	316
	Colfax	573	621		Montague	453	274
	Lincoln	1,325	1,402		Sisson	542	636
	Rocklin	643	1,026		Yreka	1,277	1,134
	Roseville	4,477	2,608	SOLANO		40,602	27,559
PLUMAS		5,681	5,259		Benicia	2,693	2,360
RIVERSIDE		50,297	34,696		Dixon	926	827
	Banning	1,810	.....		Fairfield	1,008	834
	Beaumont	857	.....		Rio Vista	1,104	884
	Blythe	1,622	.....		Suisun	769	641
	Corona	4,129	3,540		Vacaville	1,254	1,177
	Elsinore	633	488		Vallejo	21,107	11,340
	Hemet	1,480	992	SONOMA		51,990	48,394
	Perris	499	.....		Cloverdale	718	823
	Riverside	19,341	15,212		Healdsburg	2,412	2,011
	San Jacinto	945	898		Petaluma	6,226	5,880
SACRAMENTO		90,978	67,806		Santa Rosa	8,758	7,817
	Sacramento	65,857	44,696		Sebastopol	1,493	1,233
SAN BENITO		8,995	8,041		Sonoma	801	957
	Hollister	2,781	2,308	STANISLAUS		43,557	22,522
	San Juan	501	336		Ceres	637	.....
SAN BERNARDINO		73,401	56,706		Modesto	9,241	4,034
	Chino	2,132	1,444		Newman	1,251	892
	Colton	4,282	3,980		Oakdale	1,745	1,035
	Highland	693	.....		Patterson	694	.....
	Needles	2,807	.....		Turlock	3,394	1,573
	Ontario	7,280	4,274	SUTTER		10,115	6,328
	Redlands	9,571	10,449		Yuba City	1,708	1,160
	Rialto	961	.....	TEHAMA		12,882	11,401
	San Bernardino	18,721	12,779		Corning	1,449	972
	Upland	2,912	2,384		Red Bluff	3,104	3,530
SAN DIEGO		112,248	61,665		Tehama	196	221
	Chula Vista	1,718	.....	TRINITY		2,551	3,301
	Coronado	3,289	1,477		Weaverville	694	674
	East San Diego	4,148	.....	TULARE		59,031	35,440
	El Cajon	469	.....		Dinuba	3,400	970
	Escondido	1,789	1,334		Exeter	1,852	.....
	La Mesa	1,004	.....		Lindsay	2,576	1,814
	National City	3,116	1,738		Porterville	4,097	2,696
	Oceanside	1,161	672		Tulare	3,539	2,758
	San Diego	74,683	39,573		Visalia	5,753	4,550
SAN FRANCISCO CITY		596,676	416,912	TUOLUMNE		7,768	9,979
COUNTY		79,909	50,731	VENTURA		1,684	2,029
SAN JOAQUIN		4,850	2,697		Sonora	28,724	18,347
	Lodi	1,286	.....		Filmore	1,298	.....
	Manteca	40,296	28,253		Orndorf	4,417	2,555
	Tracy	2,450	.....		Santa Paula	3,967	2,216
SAN LUIS OBISPO		21,893	19,383	YOLO		4,242	2,945
	Arroyo Grande	760	.....		Ventura	17,105	13,926
	Paso Robles	1,919	1,441		Davis	989	.....
	San Luis Obispo	5,895	5,157	YUBA		903	910
					Winters	4,147	3,187
					Woodland	10,375	10,042
					Marysville	5,461	5,430
					Wheatland	435	481

CALIFORNIA DEVELOPMENT BOARD

ASSESSED VALUATION, TAX RATES AND ACREAGES BY COUNTIES—1920

COUNTIES	Acres of Land Assessed	Value of Real Estate	Value of Non-operative Property	Grand Total of All Property	Total County Rate of Taxation on Each \$100* (No State Rate)	
					Inside	Outside
Alameda.....	458,099	\$149,097,785	\$265,506,861	\$302,649,037	\$1.58	\$1.98
Alpine.....	47,832	551,065	738,087	821,963	—	1.80
Amador.....	301,889	3,072,839	5,960,428	6,830,971	2.00	2.40
Butte.....	904,164	24,729,620	36,430,815	42,673,061	2.16	2.60
Calaveras.....	530,244	4,829,380	7,402,505	8,298,986	2.60	3.00
Colusa.....	617,031	15,634,115	22,859,210	24,668,014	1.60	2.20
Contra Costa.....	459,822	28,684,375	68,476,305	75,168,667	1.93	2.40
Del Norte.....	232,490	8,200,896	9,187,600	9,192,650	1.55	1.95
El Dorado.....	687,549	5,036,465	7,382,905	8,585,033	2.40	2.80
Fresno.....	2,175,150	92,048,880	153,232,484	169,478,324	1.60	2.00
Glenn.....	631,258	17,810,882	25,296,432	27,704,892	1.20	1.80
Humboldt.....	1,678,306	27,038,215	38,812,363	41,984,519	2.35	3.00
Imperial.....	1,152,150	48,899,425	73,197,093	80,786,593	1.28	1.63
Inyo.....	257,360	6,594,397	10,587,745	15,604,943	1.70	2.00
Kern.....	3,462,292	67,639,357	105,391,764	123,796,489	1.55	1.95
Kings.....	836,698	15,987,360	23,643,505	26,817,020	3.90	4.50
Lake.....	366,256	4,710,095	6,884,318	6,909,668	1.78	2.33
Lassen.....	935,193	5,447,352	9,064,019	12,095,851	2.10	2.60
Los Angeles.....	1,193,627	559,253,510	1,057,560,560	1,275,735,264	1.325	1.835
Madera.....	807,160	14,085,240	18,889,020	21,543,688	1.75	2.15
Marin.....	311,400	14,435,905	23,242,960	25,551,413	1.70	2.10
Mariposa.....	373,859	2,452,203	3,778,606	4,379,348	—	2.70
Mendocino.....	1,736,163	18,547,760	26,788,780	29,494,976	2.00	2.40
Merced.....	1,185,756	18,248,545	28,995,348	33,189,153	2.30	2.90
Modoc.....	732,174	5,079,995	8,271,955	8,654,722	1.70	2.10
Mono.....	182,512	1,510,205	2,002,900	3,492,512	—	3.00
Monterey.....	1,482,680	23,342,220	35,570,764	40,449,052	2.15	2.59
Napa.....	414,780	11,627,705	21,305,765	23,819,194	2.40	2.85
Nevada.....	475,971	3,426,255	7,071,790	9,056,970	3.00	3.50
Orange.....	446,980	54,091,650	103,579,645	114,089,155	1.50	1.90
Placer.....	627,543	8,011,855	12,611,055	17,425,491	2.30	2.70
Plumas.....	542,716	14,298,675	18,868,805	24,130,979	—	1.50
Riverside.....	1,739,782	23,210,400	37,826,370	46,364,625	2.50	3.10
Sacramento.....	595,263	68,125,511	112,182,301	130,162,551	1.66	2.14
San Benito.....	598,062	8,091,505	12,788,590	14,150,994	2.50	2.75
San Bernardino.....	2,221,815	20,975,075	51,701,980	81,750,985	2.65	3.14
San Diego.....	1,179,246	54,362,972	79,021,174	87,373,484	2.62	3.35
San Francisco.....	29,760	298,208,815	585,105,569	819,820,078	3.18	—
San Joaquin.....	885,095	58,878,510	96,896,000	108,601,446	1.75	2.35
San Luis Obispo.....	1,642,043	19,270,492	34,206,339	37,654,508	1.87	2.30
San Mateo.....	305,850	22,647,370	35,703,285	38,481,029	2.05	2.55
Santa Barbara.....	1,037,201	26,960,995	48,042,221	54,384,800	2.10	2.70
Santa Clara.....	750,276	51,243,040	93,841,930	105,987,650	1.82	2.25
Santa Cruz.....	259,684	11,724,915	20,860,170	23,384,384	2.80	3.43
Shasta.....	1,508,877	10,482,265	15,892,120	19,928,304	2.82	3.42
Sierra.....	325,307	1,769,000	2,440,615	2,752,109	2.25	2.75
Siakiyou.....	1,909,070	13,951,175	21,639,880	27,068,051	1.76	2.36
Solano.....	517,825	15,982,581	28,528,135	32,503,428	1.65	2.05
Sonoma.....	925,408	29,403,240	47,440,710	52,548,305	2.35	2.75
Stanislaus.....	870,556	27,478,750	45,042,975	50,082,637	2.40	2.80
Sutter.....	374,513	13,205,220	17,723,157	19,901,158	2.65	3.00
Tehama.....	1,329,516	10,565,470	17,610,105	20,094,623	2.06	2.49
Trinity.....	589,044	2,558,855	3,591,550	3,880,637	—	3.00
Tulare.....	1,461,645	31,202,745	51,079,715	60,868,092	3.20	3.80
Tuolumne.....	452,588	5,144,973	8,299,165	11,307,484	2.27	2.74
Ventura.....	457,224	30,463,230	40,903,180	45,773,961	2.30	2.60
Yolo.....	639,550	17,811,315	26,881,625	30,710,368	1.80	2.40
Yuba.....	356,691	5,781,130	12,313,130	14,881,128	2.60	3.15
Totals.....	\$49,209,275	\$2,163,523,769	\$3,786,062,283	\$4,555,446,447		

*Where two rates of taxation are shown, the lesser is levied upon property situated within the limits of incorporated cities and towns, such property being exempt from road tax. No rate for State purposes this year.

(Courtesy of State Controller.)

Finance

The State Superintendent of Banks, in his annual report to the Governor covering the fiscal year ending June 30, 1920, calls attention to the fact that among the states of the Union, California though only eighth in population, stands fifth in banking resources. The combined assets of the national and state institutions in California at the time of his report aggregate \$2,440,487,000, of which the state banks hold \$1,404,360,000 and the national banks \$1,038,127,000. The increase in the assets of the state banks for the year was \$272,926,545. Loans and discounts aggregate \$772,213,880, exceeding those of the national banks by \$249,053,000, and representing an increase for the year of \$164,426,000. Individual deposits of the state banks amount to \$1,175,291,000, of which the savings banks hold \$858,122,000; total deposits are more

than \$545,000,000 in excess of those in the national banks. The increase in deposits for the year was \$227,958,000, and the total number of depositors in the banks of the State's system on June 30th, 1920, was \$2,005,260.

Principal Items of Resources and Liabilities, Banks of California

CAPITAL, SURPLUS AND UNDIVIDED PROFITS

	1919	1920
National Banks.....	\$ 118,527,000.00	\$ 129,534,000.00
State, Commercial and Trust.....	\$ 65,019,487.42	\$ 84,719,067.84
Savings Banks.....	\$ 57,983,836.59	\$ 73,485,756.00
Totals.....	\$ 241,530,324.01	\$ 287,738,823.84

INDIVIDUAL DEPOSITS

National Banks.....	\$ 647,926,000.00	\$ 632,709,000.00
State Commercial and Trust.....	\$ 321,356,306.28	\$ 346,874,108.68
Savings Banks.....	\$ 796,493,192.29	\$ 889,223,763.72
Totals.....	\$1,775,775,498.57	\$1,868,806,872.40

LOANS, INCLUDING OVERDRAFTS

National Banks.....	\$ 551,540,000.00	\$ 569,586,000.00
State, Commercial and Trust.....	\$ 240,688,688.35	\$ 301,720,278.29
Savings Banks.....	\$ 485,146,391.12	\$ 537,302,161.47
Totals.....	\$1,277,375,079.47	\$1,408,608,439.76

TOTAL RESOURCES

National Banks.....	\$1,062,486,000.00	\$1,012,400,000.00
State, Commercial and Trust.....	\$ 439,650,235.89	\$ 503,418,059.87
Savings Banks.....	\$ 873,657,909.50	\$ 986,569,217.06
Totals.....	\$2,275,794,145.39	\$2,502,387,276.93

STATEMENT OF BANK CLEARINGS AND BUILDING PERMITS

	Bank Clearings		Building Permits	
	1920	1919	1920	1919
San Francisco.....	\$8,122,064,916	\$7,286,339,237	\$32,869,009	\$18,644,343
Los Angeles.....	3,994,280,000	2,339,401,000	63,229,842	28,253,619
Oakland.....	552,613,832	459,583,335	9,489,886	7,134,572
Sacramento.....	324,347,255	270,562,450	3,449,383	2,054,842
San Diego.....	155,428,722	114,590,076	5,671,798	2,856,015
Fresno.....	277,206,368	203,237,517	6,793,087	4,131,284
Stockton.....			2,617,559	1,497,990
San Jose.....	116,995,085	93,689,822	1,743,411	1,067,841
Pasadena.....	130,724,824	75,300,686	3,834,235	1,831,725
Bakersfield.....	60,040,443	49,623,271	1,314,979	738,838
Long Beach.....	163,595,436	86,765,729	11,000,000	1,154,180

Irrigation

Several irrigation projects, notably the Marshall Plan, Iron Canyon, Klamath River and Shasta Valley, West Side San Joaquin Valley, and other smaller plans to irrigate farming land, have been proposed and are hanging fire awaiting financing. All possess some degree of merit and tend toward the expansion of the State's agriculture.

According to the preliminary figures of Department of Commerce, Bureau of the Census, "the acreage to be irrigated by works either completed or under construction, 1920" by counties is as follows: Alameda 16,527, Amador 1,033, Calaveras 42,093, Colusa 91,073, Contra Costa 49,125, Eldorado 16,848, Fresno 957,780, Glenn 185,889, Humboldt 664, Imperial 512,960, Inyo 97,998, Kern 473,709, Kings 175,971, Lake 1,811, Lassen 85,873, Los Angeles 362,116, Madera 100,128, Marin 564, Mariposa 66, Mendocino 1,736, Merced 121,611, Modoc 111,902, Mono 121,886, Monterey 59,537, Napa 1405, Nevada 5,602, Orange 109,341, Placer 3,618, Plumas 28,266, Riverside 230,144, Sacramento 141,351, San Benito 23,053, San Bernardino 186,784, San Diego 68,170, San Francisco 412, San Joaquin 324,099, San Luis Obispo 11,229, San Mateo 9,399, Santa Barbara 37,875, Santa Clara 86,510, Santa Cruz 2,671, Shasta 110,407, Sierra 18,547, Siskiyou 180,781, Solano 36,023, Sonoma 11,256, Stanislaus 375,814, Sutter 47,037, Tehama 44,720, Trinity 14,937, Tulare 657,149, Tuolumne 25,371, Ventura 50,737, Yolo 104,376, Yuba 71,185.

Agriculture

Field Crops

In value and volume of farm products, California takes fourth place in the Union in 1920, superceded only by Texas, Iowa and Illinois, in the order named.

Total production of California's field crops in 1920 amounted to 8,437,000 tons with total farm value to the grower of \$240,071,000 from 5,641,700 acres, as compared with 8,327,000 tons, valued at \$301,781,000 from 5,738,440 acres in 1919.

The aggregate of field, fruit and vegetable crops gives a grand total for 1920 of \$493,026,000 as compared with \$551,891,000 in 1919, as estimated by the Federal and State Crop Reporting Service. Their tabulated comparison of 1920 and 1919 follows:

The American Federation of Farm Bureaus, which bids fair to be the successful mediator between farmer and consumer, has sponsored the California Farm Bureau Federation. Working in conjunction with the County Farm Bureaus, this organization has already taken over the newly erected grain elevators of the Parr Terminal Company on Oakland Mole, and is planning the erection of several more in the Sacramento and San Joaquin Valleys for the 1921 crops. Standardization and grading of the immense grain yields; securing markets and establishing prices, are some of the activities of the Federation. Conference with public utilities and State Railroad Commission on subjects of power, freight rates, transportation and other vital necessities of the farmer, have already resulted in improved conditions and been well received.

That agriculture is taking a more workmanlike tone is well illustrated by tractors operating August 1, 1920—17,380, over 40% increase since 1918. Los Angeles County heads the list with 1,668, Tulare has 1,416, Orange 1,241, Fresno 1,010 and Imperial 804.

FIELD CROPS

CROP		Acreage	Production			Farm Value December 1	
			Per Acre	Total	Unit	Per Unit	Total
Corn.....	1920	90,000	35.00	3,150,000	Bushels	\$1.20	\$3,780,000
	1919	90,000	33.00	2,970,000	Bushels	1.79	5,316,000
Oats.....	1920	175,000	31.00	5,425,000	Bushels	.80	4,340,000
	1919	175,000	30.00	5,250,000	Bushels	.96	5,040,000
Barley.....	1920	1,250,000	23.00	28,750,000	Bushels	1.00	28,750,000
	1919	1,000,000	30.00	30,000,000	Bushels	1.41	42,300,000
Wheat.....	1920	650,000	14.00	9,100,000	Bushels	1.80	16,380,000
	1919	990,000	16.50	16,335,000	Bushels	2.04	33,323,000
Potatoes.....	1920	95,000	137.00	13,015,000	Bushels	1.50	19,522,000
	1919	85,000	130.00	11,050,000	Bushels	1.71	18,895,000
Sweet Potatoes.....	1920	8,000	132.00	1,056,000	Bushels	1.60	1,690,000
	1919	8,000	135.00	1,080,000	Bushels	1.79	1,433,000
Rice.....	1920	162,000	60.00	9,720,000	Bushels	1.21	11,761,000
	1919	155,000	60.00	9,300,000	Bushels	2.67	24,831,000
Hay (tame).....	1920	2,175,000	2.30	5,003,000	Tons	20.00	100,060,000
	1919	2,175,000	2.25	4,894,000	Tons	17.20	83,977,000
Hay (wild).....	1920	180,000	1.00	180,000	Tons	12.00	2,160,000
	1919	180,000	1.10	198,000	Tons	12.00	2,376,000
Hops.....	1920	12,000	1,750.00	21,000,000	Pounds	.35	7,350,000
	1919	11,000	1,625.00	17,875,000	Pounds	.77	13,761,000
Beans.....	1920	285,000	10.00	2,850,000	Bushels	3.30	9,405,000
	1919	400,000	12.50	5,000,000	Bushels	4.35	21,750,000
Cotton (lint).....	1920	275,000	260.00	71,580,000	Pounds	.18	12,884,000
	1919	185,000	268.00	49,580,000	Pounds	.43	21,319,000
Cotton (seed).....	1920	.....	.....	83,500	Tons	17.00	1,419,000
	1919	.....	.....	53,000	Tons	65.00	3,445,000
Grain sorghums.....	1920	150,000	27.00	4,050,000	Bushels	1.05	4,252,000
	1919	170,000	25.80	4,386,000	Bushels	1.54	6,755,000
Sugar beets.....	1920	123,500	8.40	1,037,000	Tons	13.62	14,124,000
	1919	107,174	7.61	815,896	Tons	14.17	11,561,000
Onions.....	1920	11,700	250.00	2,925,000	Bushels	.75	2,194,000
	1919	8,440	324.00	2,755,000	Bushels	1.90	5,196,000

Beans

California is second to Michigan in state production, contributing nearly one-third of the total supply. Distribution of the California crop ran about as follows:

Limas and bush limas grown in Southern California, 750,000 and 250,000 bags respectively; Blackeyes about 90,000 bags in Southern California and an equal amount from the San Joaquin Valley; Small Whites from Monterey and San Luis Obispo Counties and Central California, about 150,000 bags; Pinks, 150,000 bags from the Sacramento and San Joaquin deltas, and 75,000 bags from Central California; Bayos, 15,000; Cranberries, 25,000; Large Whites, 25,000 bags, all from northern districts. Until the beginning of 1921 the crop was hard to move, prices unsatisfactory, but the new year saw renewed activity in bean markets, both local and eastern, with brisk demand for better grades in all varieties.

Cotton

At the close of 1920 growers found themselves with credit exhausted and banks unable to further aid in making advances for picking and shipment to compress. Closing of textile mills, stagnant markets and increased acreage in all parts of the cotton raising sections, especially in the lower San Joaquin valley, which has proven favorable for high-grade Pima and long staple, resulted in a most critical situation for the growers. Hundreds of acres are left unpicked and much volunteer in 1921 will result. A spot cotton market has been established at Los Angeles, reduced steamship and warehouse rates obtained by its finance and marketing committees composed of the most experienced and far-sighted men in the Southwest.

The February spot market brought orders from Japan, and it is to be hoped the initial shipment of 2,000 tons of cotton seed in November from San Pedro for Germany is but the precedent of the usual 40,000 tonnage business of other years.

Of the 340,000 acres planted to cotton in California, about 50,000 were to American-Egyptian and 290,000 to Durango and short staple. Planted acreage about two-thirds of which was picked, showed Imperial County leading with 126,000 acres, Riverside 25,027, Kern 10,762, Madera 2,000, and Merced 1,100. To date of January 1, 1921, the ginning report showed but 46,593 bales ginned in California.

Grains and Sorghums

Barley still remains the leading grain crop of the State, and California again leads the nation. Yolo County sowed 262,800 acres, Solano 190,000, Colusa 170,000, San Joaquin and Stanislaus 125,000 each.

In wheat Solano County had 155,000 acres, San Luis Obispo 85,000, San Joaquin 75,000, Fresno 64,360 and Madera 59,846.

The sorghums and milo maize are planted largely in the San Joaquin and lower Sacramento Valleys, with the latter sown to 35,590 acres in Imperial County. Broom corn experienced popularity in the upper San Joaquin Valley and Colusa, justifying the establishment of several broom and brush factories.

Oats are raised mainly in the delta counties of the Sacramento-San Joaquin rivers.

Rice growers, owing to water shortage early in the season and torrential rains which prevented harvest, will probably sustain heavy losses for their 1920 crop. Not until spring of 1921 will the full extent of the damage to the rice now standing be ascertained, but it is thought not over one-third can be threshed. Efforts are under way to utilize much of the crop now in warehouse to alleviate the famine in China.

Hay

In acreage Monterey County led with 110,000 acres of grain hay, Sacramento 80,000, Solano 74,000, Alameda 65,000 and Sonoma 61,275. Tulare County led with 102,000 acres of alfalfa, Merced 96,500, Imperial 92,229, Kern 90,000 and Fresno 69,320. Prices for hay during 1920 have been highly satisfactory to the producer until the end of the season when alfalfa hay, especially of the lower grades, proved hard to move.

Early in 1920 Rabbit alfalfa hay sold at \$28.50, grain hay from \$22.50 to \$27.50 per ton. Prices declined toward the end of the year until small movement on \$15 to \$20 offerings could be obtained.

Hops

Great elation prevailed among the hop growers of Sonoma, Sacramento, Mendocino, Yolo and Yuba Counties early in the season. Prices offered for hops principally for export to England and Japan passed all precedent. Many growers, not content with offers of \$1 per pound, held for higher prices. Embargo by England on hops early in the season caused cancellation of contracts. Late in 1920 this was lifted and with the resumption of original contracts by most firms, on the whole returns were eminently satisfactory.

Potatoes and Onions

Poor quality and increased planting over 1919 tended to flood local markets with potatoes at the end of the year, bringing the price to growers almost down to the cost of production. Sweet potato markets held strong with good prices during the entire season.

In onion carload shipments California is leading producer. Riverside and San Bernardino Counties added another money maker to their list of remunerative crops. The sweet Spanish onion seems particularly adapted to soil and climatic conditions there and 100 carloads were marketed. The California Vegetable Union give the acreage of the principal vegetable crops:

Vegetables and Truck

The U. S. Bureau of Crop Estimates and the State Crop Reporting Service place an approximate valuation of \$16,000,000 upon the 1920 truck vegetable crop, largely composed of cabbage, cauliflower, potatoes, cantaloupe, etc., which was \$200,000 less than in 1919.

Artichokes coming mainly from the Half Moon Bay District south of San Francisco totaled 150 carloads, 60 of which were shipped to New York, Chicago and far eastern markets at an average price of \$6 per box to the grower.

State acreage planted to cauliflower—5,650 acres, of which Los Angeles County led with 4,000, San Mateo 1,200, Sutter 155, Alameda 150. Of the total movement of 2,319 cars valued at \$811,650 to the grower, 2,290 were shipped out of the State. Total cabbage marketed, 1,223 cars.

There were 5,760 acres of celery planted in 1920, of which San Joaquin County had 1,520 acres, Sacramento County 1,300, Contra Costa 1,165, Los Angeles 950, others 825. Approximate value to growers of the 1,785 cars moved was \$854,800.

Acreage for lettuce showed Imperial County in the lead with 5,500 acres, Los Angeles, 4,500, and others 500, contributing to the total movement of 5,764 cars, returning to growers \$907,500.

Several new sections for winter peas came into shipping importance during 1920, notably Carlsbad (San Diego County) and the Sutter Basin in the Sacramento Valley.

The sweet and green chili shipments from the Garden Grove District in Orange County, are estimated over 2,000,000 pounds for the year just past. Over 40,000 cases of pimentos were picked from the Santa Ana cannery.

CROP	Acreage	Carloads shipped from State 1920
Artichokes.....	4,700	60
Asparagus.....	23,000	490
Cabbage.....	6,400	1,223
Cauliflower.....	6,050	2,167
Celery.....	6,760	1,440
Lettuce.....	10,500	5,764
Onions.....	10,800	.....
Potatoes.....	57,580	.....
Mixed and miscellaneous vegetables.....	2,500	5,657
Peas*.....	3,000	1,500
Tomatoes.....	.....	.....
Total.....	156,190	Over 21,000

*Exclusive of canning crops.

Seeds

Acreage and exact valuation of this very important crop are not obtainable, but it is estimated in the neighborhood of \$25,000,000. Decrease in amount of alfalfa seed produced is reported from the principle districts, while Humboldt County entered upon a new industry of commercial importance with the planting of 2,200 acres of black purple Vetch, which returned from 1,200 to 1,500 pounds per acre, and tested 90% pure or better. This is in great demand by citrus growers of Southern California as cover crop, being high in nitrogen.

Decrease in acreage of flower seeds in favor of vegetable is noted. The sweet pea acreage dropped from 1,500 in 1919 to a scant 200 in 1920. Sunflowers were an important seed crop in San Joaquin Valley, especially in San Joaquin County where 1,382 acres were planted.

Sugar Beets

Orange, Monterey, Ventura, San Luis Obispo and Santa Barbara Counties led in sugar beet planting, of which about 10% was unharvested. The sugar yield is estimated at 163,700 tons. Campaign for increased planting for the season of 1921 is already begun, that this important industry representing the investment of millions in refineries and field implements, may not perish.

Renewed interest in the West Sacramento District was manifested by shipment of 2,500 tons to the Alvarado refinery.

VEGETABLE PACK (All grades and sizes) *

	1920 Cases	1919 Cases	1918 Cases
Asparagus.....	1,024,813	1,031,269	902,236
Beans, string.....	99,269	154,278	155,123
Peas.....	366,679	191,564	265,970
Tomatoes.....	1,858,822	3,809,979	3,884,973
Tomato products.....	833,019	885,906	1,809,805
Spinach.....	685,238	476,866	1,267,713
Other vegetables.....	382,116	501,657	1,267,713
Total cases.....	5,249,946	7,051,519	8,285,820

*Courtesy "Canning Age."

Orchard Crops

Fruit crops of California in 1920 brought to the grower some \$236,955,000, or an average of \$94 per ton for the odd 2,530,000 tons raised, according to the Federal and State Crop Reporting Service. This was 166,000 tons less than the fruit crop of 1919, but owing to the increase of \$7 more per ton, brought the growers \$2,045,000 over the previous season.

The following important tables will give a very definite idea of the disposal of the crop:

FRESH DECIDUOUS FRUIT SHIPMENTS*

(Number of cars—north of Tehachapi—apples not included.)

VARIETY	1915	1916	1917	1918	1919	1920
Apriots.....	392½	289½	403	440½	419½	312
Cherries.....	395½	164	330	356	335	494
Grapes.....	9,563½	9,722	13,943½	16,358½	19,017½	24,065
Peaches.....	1,688½	1,909½	2,431½	3,137	2,773½	3,107½
Pears.....	2,645½	3,701	4,802	4,571½	4,248½	4,376½
Plums.....	2,224½	1,968½	2,651½	2,483½	2,918½	2,533½
Sundry.....	58½	106½	66½	76	49	312½
Total cars.....	16,778	17,891	24,628	27,421½	29,761	35,201

CALIFORNIA CITRUS FRUIT SHIPMENTS*

Shipped.....	Southern California		Nor. and Cen. California		Total California Movement Cars
	Oranges Cars	Lemons Cars	Oranges Cars	Lemons Cars	
Seasons Totals:					
Nov. 1, 1919-Oct. 31, 1920.....	30,025	8,733	5,522	296	44,576
To Oct. 31, 1919.....	35,436	9,741	3,571	282	49,330

*Courtesy of California Fruit News.

CALIFORNIA DEVELOPMENT BOARD

CALIFORNIA DRIED FRUIT OUTPUT*

	1915 Tons	1916 Tons	1917 Tons	1918 Tons	1919 Tons	1920 ^a Tons
Apples.....	4,000	4,500	8,500	6,250	12,500	5,000
Apricots.....	19,500	11,000	15,500	15,500	15,500	10,000
Figs.....	8,600	9,900	8,600	9,200	12,000	12,000
Peaches.....	32,000	30,000	39,000	20,500	34,000	24,000
Pears.....	2,000	3,000	4,500	2,750	5,750	2,500
Prunes.....	92,500	78,500	109,000	45,000	140,000	90,000
Raisins.....	127,000	132,000	163,000	167,000	197,500	185,000
Total tons.....	285,600	268,900	348,100	265,700	417,250	328,500

^a1920 figures are not final.CALIFORNIA CANNED FRUIT PACK*
FRUITS (All Grades and Sizes)

	1920 Cases	1919 Cases	1918 Cases	1920 Pack unsold Jan. 20, 1921 Cases
Apples.....	9,041	134,243	167,705	981
Apricots.....	2,312,020	4,395,204	2,223,314	856,451
Blackberries.....	161,359	114,349	119,111	33,930
Cherries.....	647,977	460,614	360,090	179,706
Grapes.....	114,886	104,446	99,068	18,449
Loganberries.....	14,267	11,708	48,992	635
Pears.....	1,184,288	1,071,687	811,950	297,875
Free Peaches.....	1,547,687	1,962,700	1,393,585	380,900
Cling Peaches.....	5,205,511	5,096,249	3,122,458	1,212,960
Plums.....	164,740	280,261	148,577	64,437
Raspberries.....	.....	233	4,015	.....
Strawberries.....	5,525	22,123	2,002	2,618
Other fruits.....	15,562	42,584	432,860	5,429
Total cases.....	11,382,863	13,696,403	8,943,737	3,054,371
Estimated carry-over, two firms from whom detailed report not received.....	.....	.....	.....	12,500
				3,066,871

3,066,871 (total unsold stock) equals 26.9 per cent of 11,382,863 (total pack.)

*Courtesy California Fruit News.

RAISINS—TONS

COUNTY PRODUCING	Muscat	Thompson Seedless	Sultana	Malagas Black Fehersagons	Total
Fresno.....	59,065	45,185	6,539	4,732	115,521
Tulare.....	9,350	12,066	4,339	875	26,630
Kings.....	9,222	825	480	64	10,591
Sutter.....	68	6,712	29	.....	6,807
Madera.....	1,964	1,492	152	291	3,899
Yolo.....	31	123	318	24	496
Kern.....	360	245	48	7	660
San Bernardino.....	1,799	13	116	.....	1,928
Merced.....	156	988	8	268	1,420
San Diego.....	848	.....	13	.....	861
Stanislaus.....	114	918	19	259	1,310
Yuba.....	8	494	.....	3	505
San Joaquin.....	.....	55	1	.....	56
Total.....	82,983	69,116	12,062	6,523	170,684

APPLES

DISTRICT	Packed Boxes	Average price to grower per packed box	Other Uses
Watsonville Section, Pajaro Valley.....	2,500,000	\$1.25	
Bellflower.....		1.80	
Newtown Pippin.....			
Sebastopol—			
Gravenstein.....	412,500	2.40	} 2,000 tons dried
Other varieties.....	131,250	1.75	
Beaumont Section, Riverside County.....	41,650	1.20	
Humboldt County.....	25,000	1.65	220 tons vinegar
Yucaipa District.....	13,324	1.20	500 tons vinegar
Ramona—Julian District.....	12,500	2.25	300 tons dried
Tuolumne County.....	8,000	2.45	45 tons vinegar
Paradise District (Butte County).....	7,000	1.50	40 tons vinegar
			50 tons vinegar
			1,000 tons vinegar or cider

COMMERCIAL ORCHARD CROPS

FRUIT	State Production	Value of Crop	Five Leading Counties*	No. of Trees 1920	
				Bearing	Non-bearing (1) indicates rank
Almonds.....	5,500 tons	\$ 1,980,000	Stanislaus	513,200	71,000
			Butte	393,120	57,040
			Yolo	336,800	.....
			San Joaquin	330,675	112,744
			San Luis Obispo	245,000	875,000 (1)
Apples.....	3,000,000 boxes	9,605,000	Santa Cruz	666,401	25,302
			Sonoma	292,766	20,740
			Riverside	193,400	117,300
			San Bernardino	155,210	694,800 (1)
Apricots.....	115,000 tons	9,775,000	Napa	102,370	69,747
			Santa Clara	627,500	44,400
			Riverside	455,500	412,500 (1)
			Ventura	417,814	243,118
			Solano	246,100	.....
Cherries.....	15,000 tons	3,000,000	Alameda	242,600	3,000
			Santa Clara	135,000	22,700
			San Joaquin	108,286	83,422 (1)
			Solano	99,500	.....
			Alameda	91,500	2,210
Figs.....	10,000 tons	900,000	Napa	64,020	35,373
			Fresno	162,320	131,840 (1)
			Tulare	75,000	.....
			Merced	72,000	78,000
			San Bernardino	61,520	75,350
Grapefruit.....	About 328,000 boxes	984,000	Stanislaus	39,300	40,400
			San Bernardino	44,310	91,700 (1)
			Tulare	44,000	.....
			Riverside	32,880	14,040
			Los Angeles	7,098	2,358
			Imperial	4,120	38,640
Lemons.....	1,500,000 boxes	2,700,000	Ventura	467,119	276,410 (1)
			Orange	350,000	.....
			Riverside	327,750	86,550
			San Bernardino	298,560	28,650
			Los Angeles	228,747	78,521
Olives.....	10,000 tons	800,000	Placer	265,280	6,894
			Butte	184,880	202,400 (1)
			Riverside	146,080	74,290
			Tulare	120,000	.....
			Tehama	90,720	12,500
Oranges.....	18,700,000 boxes	51,425,000	San Bernardino	3,398,720	870,530 (1)
			Tulare	1,900,000	.....
			Riverside	1,729,100	150,850
			Orange	1,100,000	.....
			Los Angeles	1,010,406	162,019
Peaches.....	345,000 tons	26,220,000	Fresno	3,750,720	10,940
			Placer	1,530,200	114,036 (1)
			Tehama	932,697	6,300
			Merced	560,000	80,000
			Solano	500,000	.....
Pears.....	90,000 tons	8,100,000	Solano	330,000	.....
			Santa Clara	198,700	53,700
			Placer	173,650	160,596
			Sacramento	164,000	61,000
			El Dorado	160,000	40,000
Plums.....	35,000 tons	3,150,000	Lake	.....	233,191 (1)
			Placer	372,570	92,032 (1)
			Solano	195,000	.....
			San Joaquin	110,256	40,823
			Napa	103,424	45,234
			Sacramento	60,000	28,000
Prunes.....	95,000 tons	19,000,000	Santa Clara	7,429,500	699,000
			Napa	987,342	856,629 (1)
			Solano	575,000	.....
			Sonoma	441,360	517,860
			Tulare	410,000	.....
Walnuts.....	21,500 tons	8,600,000	Orange	210,000	.....
			Ventura	203,733	.....
			Los Angeles	177,048	53,051
			San Joaquin	101,552	44,574
			Santa Barbara	70,000	.....
			San Bernardino	.....	101,150 (1)
Grapes—				Acres	
Raisin.....	180,000 tons	55,800,000	Fresno	80,120	9,280 (1)
			Tulare	23,000	.....
			Kings	10,240	557
			Sutter	5,078	480
			Madera	3,519	968
Table.....	160,000 tons	12,000,000	San Joaquin	15,594	507
			Fresno	9,530	4,950
			Sacramento	9,500	250
			Tulare	5,200	.....
			Placer	4,350	5,751 (1)
Wine.....	380,000 tons	24,700,000	Fresno	22,320	7,000 (1)
			Napa	20,300	.....
			Sonoma	15,840	.....
			San Bernardino	14,150	.....
			San Joaquin	13,091	119

*From State Board of Equalization, 1920.

Car shortage, increase in freight rates and lack of protective tariff on nearly every article of the fruit and field crops, made returns to grower, jobber or broker uncertain and at times highly discouraging. The trial shipments of 30,000 boxes of apples in refrigerator ships via the Panama Canal direct to England in November proved conclusively the practicability of large future business. The fruit, while "C" grade, met a ready market at Liverpool. The new 535's of the Manila-East India service are provided with 1,200-ton refrigerator space and will open up new markets for California's perishable produce.

Almonds

Along the protected foothill sections in Capay Valley, Glenn, Colusa and Butte Counties, and in the Paso Robles District and San Joaquin County, planting of almonds in 1920 far exceeded any previous year. The California Almond Growers' Exchange now represents 85% of the producers, or some 3,800 growers. The shelled almond demand for the California product is increasing so substantially that an exchange for the marketing of almond meats was established early this year. Protective tariff for almonds as well as other fruits, must be sufficient to guarantee their profitable marketing, if the increasing acreage of new planting is to be remunerative and the market stable.

Opening prices named by the California Almond Growers' Exchange for 1920 crop on September 13th were: Non Pareil 25c, I X L 25c, Ne Plus 24c, Drake 17c, Longuedoc 17c, hard shell 12c.

Apples

The commercial apple pack is distributed per table page 10.

The pack of Gravensteins from the Sebastopol District was the heaviest ever shipped and averaged \$1.78 per box net to the grower. The Tuolumne crop was 25% of normal. Labor and hauling costs made the dried apple crop not highly profitable and less than half the usual production resulted. Owens Valley in Inyo County is just beginning to realize on young orchards and will next season be reckoned among the commercial producing sections, as will also the mountain districts of San Bernardino County.

Apricots

The crop was exceptionally light. Most of the higher grade dried cots met an eager eastern market and by the end of February the 1920 crop with the exception of small holdings of lower grades, was cleaned up. The California Prune and Apricot Growers' Association named opening prices July 16th: Sun-sweet Blenheim, choice 24c, extra choice 26c, fancy 28c, extra fancy 30c, Moorpark fancy 30c, extra fancy 33c, growers' brand choice 22½c, extra choice 24½c, fancy 26½c, standard 18c, slabs 20c; all bulk basis carloads.

Avocados

Each year a few acres more come into bearing and with wider publicity furnished by the Avocado Association of California and its efforts to influence new planting to standard varieties, the industry promises to arrive on a footing of commercial importance within a few years.

Cantaloupes and Other Melons

The Imperial Valley and the Turlock District in Stanislaus County are the two most important producers of cantaloupes, although they are grown and shipped from nearly all of the valley counties. During 1920, 12,849 cars were shipped out of the State, about two-thirds of which came from the Imperial Valley, 2,719 from Turlock District, over 100 each from Tipton-Porterville-Lindsay District and Palo Verde Valley, while Sacramento-Sutter Basin contributed some 1,200 carloads. Wide range in prices prevailed. From \$5 to \$7 in eastern markets in July, to \$1.25 to \$1.50 during heavier shipping season.

Watermelons, Casabas, Honey Dew and Persian melons from the valley counties added many thousands of dollars to production. Imperial, Merced, Stanislaus, Tulare and San Joaquin Counties lead in the order named in acreage of melons other than cantaloupe.

Dates

Riverside County has 5,875 bearing and 43,095 nonbearing trees, while Imperial County has 3,160 bearing and 11,005 nonbearing. Dates in experimental way have borne edible fruit in the lower San Joaquin Valley, but planting is extremely expensive, the tree long in coming to full bearing and the price of land too high to warrant much experiment outside of the two approved districts. The pack of shipping dates for 1920 was about 250,000 lbs.

Berries

The Central California Berry Growers' Association through whose auspices 90% of the crop in Central and Northern California is marketed, estimate the following production for 1920: Strawberries 84,000 chests, blackberries 19,000 chests, raspberries 9,000 chests, loganberries 8,500 chests. Imperial, Los Angeles, Monterey and Santa Cruz Counties are also important producers of strawberries, but assessed acreage in the five leading counties show Placer leading with 1,500, Sacramento 800, Fresno 720, Imperial 670, Alameda 400. From a total strawberry production in 1919 of 241,962 chests, 703 were shipped out of the State. Increased planting to strawberries this year is evident. Etersberg in Humboldt County, and Castella in Shasta County are becoming world-famous for their production and shipments of strawberry plants.

Citrus

Statements from the annual report of the California Fruit Growers' Exchange: "During the year ending August 31, 1920, the Exchange shipped 12,144,964 boxes of oranges, 226,266 boxes of grapefruit, and 3,452,534 boxes of lemons, an aggregate of 34,461 carloads. Total shipments from the State, 38,077 carloads of oranges and grapefruit and 8,680 carloads of lemons, total of 46,757 carloads. Returns f.o.b. cars California for fruit shipped through the Exchange, including the estimated value of cars yet unsold, will be approximately \$59,221,329. Using the Exchange returns as basis, returns to California for the total crop of 1919-20, including the portion of the 1919 Valencia crop which sold after August 31st, will approximate \$81,200,000, representing a delivered value in wholesale markets of \$106,600,000, including \$25,400,000 of freight and refrigeration charges. The retail dealer paid approximately \$121,100,000 and the consumer \$166,000,000 for the fruit. The Exchange shipments represent 73.7% of the total citrus fruit movement from California, an increase of 1.4% over the preceding year."

In volume of shipments Riverside District led with 2,830 cars, averaging 470 boxes per car, due to heavy loading during the car shortage, which averaged \$4 per box to grower and brought over \$5,300,000 f.o.b. Riverside. Terra Bella District in Tulare County is a new producing district, shipping about 50 carloads, while about 1,200 carloads went from the neighboring Lindsay District.

Imperial Valley grapefruit was on eastern markets the first week of November, a month ahead of last year. About 40 cars shipped.

Grapes

Value of and prices received for the 1920 grape crop read like a fairy tale. A total of 23,136 cars all varieties moved, an increase of 5,600 over 1919. Fabulous prices were obtained, one shipment of Bouchets bringing from \$325 to \$350 a ton in New York and Boston, with local markets paying \$125 to \$170. Lodi grapes f.o.b. cars brought \$17,649,500, Livingston \$1,029,020, Lindsay's \$300,000, and growers of Kern, Fresno Kings, Yuba and Madera Counties netted millions.

The California Associated Raisin Company named opening prices on raisins in August as follows: Muscats, Sunmaid per pkg., 21c, Bakers' Sunmaid per lb., 20c, 1, 2 and 3 crown recleaned 20c, 22¼c and 23½c respectively; Layers, 3, 4 and 6 crown 5-lb. boxes \$1.30, \$1.40 and \$1.60 respectively; Thompson Seedless Sunmaid recleaned, 20½c per lb. in 25-lb. boxes; Sultanias, 20¼c per lb. in 25-lb. boxes. During November the price was advanced ½c per lb.

Through the courtesy of the California Associated Raisin Company, the production according to varieties for the 1920 crop appears page 10.

Peaches

Opening prices, California Peach Growers' Inc., for Blue Ribbon Brand peaches in cartons were named July 22nd: 60 11-oz., \$9; 24 2-lb., \$10.20; 10 5-lb., \$10.50 f.o.b. factory. Bulk prices named on Aug. 4th were: Standard yellow 15½c, fancy 17½c, extra fancy, 18½c, slabs 15¼c; Muirs, 15¾c, fancy 18¼c, extra fancy 19½c, bakers' special practically peeled 18½c, practically peeled quoted 21½c over prices of unpeeled.

Pears

Less than half the tonnage of 1919 was dried—only about 2,500; canneries took 74,000 tons. The Ukiah Valley had a bumper crop of 1,500 tons. Prices throughout the season not up to expectation.

Persimmons

Vacaville shipped its first solid car of persimmons direct to New York in November, meeting a high-priced and active demand.

Prunes

Opening prices by the California Prune and Apricot Growers' Association on Aug. 12th was for Sunsweet quality, per lb. in 25-lb. boxes: 20-30 flat, 25c; 30-40 bulk basis 17c, 40-50 bulk basis 15½c, 50-60 bulk basis 13c, 60-70 bulk basis 11½c, 70-80 bulk basis 10½c, 80-90 bulk basis 9½c, 90-100 bulk basis 9½c; growers' quality ½c per lb. less than Sunsweet on sizes 30-40's to 90-100's. During the latter part of 1920 the Government threw quantities of prunes purchased during the war into an already inactive market and recovery was slow. Early weeks of 1921 saw more activity in eastern orders than for some time.

Walnuts

Demand was strong at the opening prices fixed by the California Walnut Growers on Oct. 7th: No. 1 22½c, No. 2 16½c, fancy budded 25c, Golden State budded 22½c, less 1% f.o.b. Southern California. Early in 1921 the Association advanced prices 1c per lb., as the entire 1919 and 1920 crops had been cleaned up, with the exception of three cars held for fall delivery. Around the holidays local markets were depressed by the arrival of large shipments of Manchurian walnuts. Markets in the East, however, have been steady and the prices satisfactory.

Livestock

The Department of Agriculture gives the value of all livestock in California as of January 1, 1921, \$203,357,000, as compared with \$234,627,000 a year ago.

Follows estimated number and value per head, etc., of livestock in California at the beginning of the year:

Class	Number	Value	
		Per Head	Total Value
Horses.....	380,000	\$89.00	\$33,820,000
Mules.....	57,000	125.00	7,125,000
Milk Cows.....	577,000	95.00	54,815,000
Beef Cattle.....	1,683,000	44.00	74,052,000
Sheep.....	2,950,000	6.80	20,060,000
Swine.....	930,000	14.50	13,485,000

Cattle—Dairy and Beef

High hay, mill feed and labor costs discouraged many small dairymen during the early part of 1920. This resulted in many small dairy properties being thrown on the market and dispersal sales in some of the finest pure-bred herds.

Valuation of milk and by-products for the State is estimated at \$99,000,000 for fiscal year ending July 1, 1920. The Pacific Dairy Review gives the receipts of butter on the San Francisco market for 1920 as 24,340,000 lbs. Of this 1,310,000 lbs. were imported, but the bulk passed through the port consigned to middle western markets. San Francisco market average on creamery extras

was 60.19c per lb. Peak quotation for the year showed in September, when creamery extras brought 70 $\frac{1}{2}$ c, and lowest was in December at 48 $\frac{1}{2}$ c.

Receipts of cheese on the San Francisco market showed 10,118,800 lbs for 1920, as compared with 11,443,500 lbs. in 1919. Quotations on extra fancy California cheese was 30.96c per lb. for the year, against 32.11c in 1919.

Shipments of pure-bred beef and dairy cattle as well as the quiet little worker, the milk goat, have been sent to China, Japan, the Hawaiian and Philippine Islands during the past season.

Goats

California leads in number and valuation of milk goats. Central and Northern California are founding more herds and the industry is assuming promising commercial importance on a par with that firmly established in the southern part of the State. The Humboldt milk goat raisers formed the North Coast Milk Goat Association, of which Edward French, Ettersberg, is secretary, early in 1921. Their present plans embrace the making of imported types of goat milk cheese and one of their directors is now in Europe buying pure-bred sires and engaging a cheesemaker. The California Tuberculosis Association is planning a milk goat farm which will furnish means to rehabilitate destitute patients and at the same time given the industry favorable and widespread impetus.

Honey and Beeswax

Riverside County ranks first as honey producer of 820 tons valued at \$328,000. Orange County had 300 tons valued at \$300,000; San Diego shipped out 50 carloads valued at \$250,000; Alameda County was a large producer mostly from small and city lot colonies.

California Co-operative Honey Producers' Exchange standardizes high grade white orange blossom and white sage honey under "Sunni-Hunni" brand. Prices ranged from 16 cents for white orange to 9 $\frac{1}{2}$ cents for alfalfa per lb. to producers. Beeswax slid from 51 cents to 39 cents during the year.

Poultry and Eggs

The United States Bureau of Markets estimates 922 carloads of eggs shipped from California during 1920, half of which came from the Petaluma district and 255 carloads made up in San Francisco; Los Angeles shipped 110 cars, San Diego 15, and Santa Cruz 2. Modesto shipped its initial carlot during February, 1921, with all indications for a commercial continuance. Average quotation for year on fancy ranch eggs in San Francisco market, 61 cents per dozen, would give a total valuation of \$8,098,748 of the shipments, but California large whites brought as high as \$1.08 per dozen wholesale on the New York market during December, 1920. On the whole eggs shipped to eastern markets returned the producers higher prices than the San Francisco market.

The Central California Poultry Producers' Association, which operates in several districts, including Petaluma, handled 460,303 cases of eggs, and Petaluma shipped 22,223,923 dozen eggs and 240,041 dozen poultry in 1920, compared with 16,047,355 dozen eggs and 115,874 dozen poultry in 1919. The Southern California Poultry Producers' Association marketed 4,103,444 dozen eggs during the year just past valued at \$2,096,450.37.

Turkeys brought 60c per pound live weight during the holidays, and growers who consigned to the extremely active market were well satisfied. Preference is shown for the Imperial Valley white turkeys, and the 1920 crop returned more than \$200,000 in that territory for the 700,000 pounds, or about 30 express carloads, shipped out.

Sheep and Wool

The wool clip for the two seasons of 1920 was about 12,000,000 pounds, of which the Federal Reserve Bank estimates at least 80% is consigned or held by growers. On a scoured basis in Boston, California northern wool is quoted as 78-80c; central 75c, and southern 55c.

Wool the entire year has been a drug on the market, the sheepmen holding for better prices and resumption of milling activities in eastern spinning centers.

Lumber

Great depression in lumber market throughout the year resulted in smaller cut in both pine and redwood than many previous seasons. Total value of State production all lumber is estimated by the U. S. Forest Service at one and one-half billion board feet, valued at \$60,000,000 to mill owners, from the 375 mills operating during the year.

Pine lumber output is expected to double within the next few years. From eight to nine million board feet is the yearly average cut of pine, at which rate the virgin timber will last for over 250 years. The California White and Sugar Pine Manufacturers' Association estimates the stand of pine and fir in California as approximately 225 billion feet, divided as follows: Sugar pine 33 billion, California white pine (Western yellow pine) 83 billion, Douglas fir 37 billion, white fir 35 billion, incense cedar 8 billion, red fir 16 billion, and the balance unclassified.

The California Redwood Association gives the cut from fourteen million as 319,101,000 board feet. This is probably about 65% of the total.

Minerals

With a total value of approximately \$242,142,000 for all mineral production in 1920, California again leads the Union as gold producer with output valued at \$14,305,300. Nevada lost supremacy as the leading silver producing state, taking fourth place to Montana, Utah and Idaho, while California came seventh with production of 1,513,495 ounces valued at \$1,560,000. Striking decreases in value are shown for gold, copper and quicksilver production.

Other estimated quantities and values for 1920 are given by the State Mining Bureau:

\$2,340,000 (13,000,000 lb.) copper; \$404,000 (5,000,000 lb.) lead; \$121,000 (1,500,000 lb.) zinc; \$772,000 (9,770 flasks) quicksilver; \$40,000 (400 fine oz.) platinum; \$194,000,000 (105,000,000 bbl.) petroleum; \$37,000 (1500 t.) barite; \$78,000 (2500 t.) manganese; \$840,000 (70,000 t.) magnesite; \$1,000,000 (55,000,000 M. cu. ft.) natural gas; \$16,000,000 brick, cement, building stone, crushed rock; \$2,000,000 miscellaneous 'industrial' minerals, and \$500,000 silicates (including borax, potash, salt, soda). Total, \$242,142,000.

Great activity is demonstrated by wildcat companies negotiating for oil leases, experimental borings and much changing of oil stock. New wells brought in during the past year in the Elk Hills district in Kern County, and Huntington Beach in Orange County, both of which show high-gravity oil averaging over 30° Baume, account for the increased petroleum production of 1920, which exceeded that of 1919 by 4,499,402 barrels and is 2,097,491 barrels more than the heaviest production year of 1914.

SUMMARY OF FIELD OPERATIONS AND PRODUCTION—1920

FIELD	Rigs Completed During Year	Wells Completed During Year	Abandoned During Year	Production	
				Per Year	Total
Kern River.....	129	93	4	7,456,515	
McKittrick.....	11	8	9	2,607,240	
Midway-Sunset.....	255	197	16	37,917,010	
Lost Hills-Belridge.....	35	27	6	4,139,767	
Coalinga.....	88	66	20	15,464,198	
Lompoc and Santa Maria.....	30	28	5	5,928,060	
Ventura County and Newhall.....	38	28	6	2,122,449	
Los Angeles and Salt Lake.....	8	2		1,311,364	3,583
Whittier-Fullerton.....	250	123	8	28,694,163	78,399
Summerland.....				54,910	150
Watsonville and miscellaneous.....	16			25,610	78
Total.....	858	572	74	105,721,186	288,356
Total crude oil stocks, Dec. 31, 1919.....				30,480,328	barrels
Total crude oil stocks, Dec. 31, 1920.....				22,240,371	barrels
Decrease during year.....				8,240,052	barrels
Daily decrease during year.....				22,614	barrels
Total shipments.....				113,961,338	barrels
Daily shipments.....				311,370	barrels



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